National Park Service
Standard Exhibit Planning and Design Specifications
Harpers Ferry Center

Changes to Specifications - January 31, 2008 Edition

(Revision to previous edition dated December 8, 2006)

The following changes have been incorporated into the January 31, 2008 edition:

Section 2: Definitions
ABAAS definition revised.
Definitions for IDIQ Contract and Task Order added.

Section 3: Exhibit Planning & Design Process
3.4A(3)(c) added, requiring updated estimates in the Design Development I report.

Section 6: Production Costs Estimates
6.4A (first paragraph) revised to include updated Class B production cost estimates in Design Development I and Design Development II phases.
6.4A(2) revised to include Design Development I and Design Development II phases.
6.4A(3) revised to fix typographical error.

Section 8: Accessibility
This section has been re-written to conform to the document “Programmatic Accessibility Guidelines for National Park Service Interpretive Media, October 2007.

Section 11: Content Management
This section has been re-written for clarity, and to add detail on the current version of the Museum Exhibit Planner database application.

Section 15: Graphic Layouts and Digital Graphic Files
15.5A revised to add CS3 versions of Adobe graphics software.
15.5D(2) revised to require OpenType fonts for all Digital Graphic Layout files unless another font technology is approved in advance by the COR.

CONTENTS

Section 1. PROJECT MANAGEMENT

1.1 Introduction

The purpose of the following Project Management tasks is to insure that scheduling, coordination, oversight, and communication is effectively accomplished for all work produced under this Contract.

1.2 General Requirements

The Contractor shall assign a Project Manager to oversee the Base Contract and shall also assign a Project Manager for each Task Order written under this Base Contract.

1.3 Specific Requirements for Base Contract Project Management

The Contractor's Base Contract Project Manager shall be the primary point of contact between the Contractor and the National Park Service (NPS) Contracting Officer and Contracting Officer's Representative (COR) for the Base Contract. The Base Contract Project Manager shall perform the following work:

A. Notify the Contracting Officer and Base Contract COR of any changes to the Contractor's business operations that affect work under this contract, including but not limited to:

(1) Changes to Contractor's address, phone and other contact information.

(2) Proposed changes to key personnel.

(3) Workload or capacity issues affecting the ability of the Contractor to accept additional work.

B. Communicate with the Contracting Officer and Base Contract COR regarding major or broad issues affecting Task Orders written under this contract, including but not limited to:

(1) Clarification of work processes that are acceptable or unacceptable to the Government under this contract.

(2) Informing Contracting Officer and Base Contract COR of misunderstandings, inconsistencies, or conflicting instructions encountered when working with different parks and different Task Order COR's.

C. Prepare and submit an electronic status report every six months which lists all active Task Orders by number and includes, at a minimum, the name of the park and/or client, type of work being performed and results achieved during the reporting period, an indication of any current problems that may impede performance, the proposed corrective action, and the completion date.

1.4 Specific Requirements for Task Order Project Management

The Contractor's Task Order Project Manager shall be the primary point of contact between the Contractor and Task Order COR for individual task orders and shall perform the following work:

A. The Contractor's Task Order Project Manager shall have full authority to act for the Contractor on all matters relating to a specific Task Order. The Project Manager shall maintain contact with the Task Order COR as necessary, and shall:

(1) Be available to take or respond to telephone calls or electronic mail messages during normal hours of operation (8:30 am - 5:00 pm local time).

(2) Establish office procedures to ensure that messages are relayed to the Project Manager when out of the office or because of time zone differences.

(3) Respond to emergency messages from the COR on the same day they are received. All non-urgent messages from the COR shall be responded to in no less than two days.

B. Provide quality control to ensure that all elements of project work meet the requirements of the contract specifications as follows:

(1) Provide routine inspections of ongoing work.

(2) Inform the COR of any issues that could affect work quality or schedule.

(3) Ensure that all work not acceptable or compliant with the specifications is corrected prior to review by the COR.

C. Track work progress to ensure that the project is completed according to the schedule. Coordinate and confirm the dates for all submittals and meetings with the COR.

D. Meet with the Contracting Officer and COR in accordance with Section 4, Travel, Meetings, Presentations, and as specified in individual Task Orders.

E. Receive, inspect, and inventory all Government-Furnished materials and ensure that this material is forwarded to the appropriate unit or person within the Contractor's organization for use in the project. The Project Manager shall notify the COR within seven days after receipt if Government-Furnished materials are not satisfactory for their intended purpose. The Project Manager shall notify the COR as soon as possible if Government Furnished materials are lost or damaged while in the Contractor's possession.

F. The Project Manager shall coordinate and ensure that all specifications for submittals are in accordance with Section 5, Submittals and Reviews, and as specified in individual Task Orders.

Section 2. DEFINITIONS

ABAAS: Architectural Barriers Act Accessibility Standards are the accessibility standards which pertain to the Federal sector. The **ABA**, or Architectural Barriers Act of 1968, requires access to facilities designed, built, altered, or leased with federal funds.

Artifacts: cataloged items from NPS resources or loan items from other museums, historical associations, libraries, etc, requiring the highest level of preservation criteria.

AV Treatments: a narrative overview of the proposed production's creative approach and storyline, a description of the actors and/or participants, their roles and general dialogue or narration, and a general description of the scenes, locations, graphics, artwork, and animation to be used in the production with sufficient detail to provide a sense of the proposed production; the basis of the production plan and script.

Bubble Diagrams: Diagrams that use labeled shapes (bubbles) identifying exhibit themes and concepts to show how they relate to each other and/or to their location on the exhibit floor plan.

Charette: A meeting to brainstorm and fully explore all possible design directions for communicating the content of the exhibition during. Differs from the Exhibit Planning Workshop in that it is more focused on design solutions.

Class A Production Cost Estimate: Detailed cost estimate based on specifications for all exhibit elements found in the Production Documents.

Class B Production Cost Estimate: An intermediate level cost estimate based on the overall cost for each exhibit area identified in the exhibition plan, including allowances for high-cost exhibit elements, contingency, shipping and installation.

Class C Production Cost Estimate: An initial cost estimate based on the cost of the exhibition per square foot.

Comprehensive Exhibit Plan: A database report consisting of a narrative compilation of all elements in an exhibition, arranged in order according to the element ID numbers.

Content Management: A system to organize and track all media elements to be featured in the exhibition, organized by unique exhibit element number.

COR: Contracting Officer's Representative. For Federal Government contracts, an authorized representative of the Contracting Officer responsible for monitoring the quality and performance of work performed under individual contracts. This is similar to the concept of "Owner's Representative" used in private sector contracts.

Custom Interpretive Element: Any exhibit element that requires creative design, and/or artistic development and execution by an artist, illustrator, photographer, sculptor, craftsman, or other creative or technical specialist, such as original illustrations, artwork, maps, sculptures, models, dioramas, scrims, and life-sized figures.

Design Alternatives: Distinct approaches to the exhibit content, its organization and presentation in the given exhibit space provided in the Schematic I phase for use in selecting and developing a preferred alternative.

Design Development: The phase of the exhibit development process in which all major details of the project are accounted for.

Display Objects: Purchased and/or non-cataloged items used in the exhibit to enhance the story, such as models, props, natural history specimens, reproductions, and sculptures

Exhibition: The overall interpretive presentation which may consist of several exhibit areas. Each exhibit area may consist of several related exhibits. Each exhibit may consist of several individual related exhibit elements.

Exhibit Design: Development of the physical organization of the exhibit space, integration of all exhibit elements into a cohesive presentation, functional characteristics and visual appearance of exhibit elements, and development of technical details for fabrication.

Exhibit Designer: The person who typically takes the lead with design tasks.

Exhibit Developer: The person who typically takes the lead with planning tasks.

Exhibit Evaluation: The process for better understanding the audience by using social science methods, and using this information to produce effective exhibits.

Exhibit Numbering System: A system that identifies each exhibit element with an individual number (the Exhibit Identification Number) made up of three parts, separated by hyphens, as follows: element category - exhibit number - item number.

Exhibit Objective: A statement specific to the intent of each exhibit that directs the entire exhibit development process, including decisions about content, interpretation, media selection, and presentation techniques.

Exhibit Planning: Story development, content research, organization of content, text writing, and other tasks associated with the interpretive content of an exhibit.

Exhibit Planning Workshop: A meeting to review and analyze the space and propose recommendations, review existing planning documents, review and/or develop design criteria, conduct research, review and/or develop themes, goals, and objectives, define target audience, and discuss the desired visitor experience. Differs from the Charette in that it typically does not explore design solutions.

Front-end evaluation: Evaluation conducted at the beginning of a project that seeks input from potential visitors to find out what kinds of information they already know, what visitors would like to know, and explores how exhibits can best present this interpretive information.

Formative Evaluation: Evaluation conducted before the fabrication of exhibits, when mock-up testing can be carried out to reveal problems and successes with proposed designs.

FPO: For position only.

Graphic Layout: Typically the design of an entire two dimensional exhibit element.

Graphic Production: All of the work required to create Production Ready digital graphic files.

IDIQ Contract: Indefinite Delivery, Indefinite Quantity Contract. A contract established for the purpose of awarding multiple individual projects over an extended period of time. The IDIQ contract establishes basic parameters for the type of work to be done, pricing, contractor capabilities, and performance standards. **Task Orders** are negotiated under the IDIQ contract for individual projects and include a detailed scope of work describing the project's technical requirements and schedule.

Interpretive writing: A writing approach that draws from technical, informational, scientific, historical, and cultural sources; it incorporates creative techniques and seeks to connect readers emotionally and intellectually to the meanings and significance of the resource(s).

Life-cycle Costs: An estimate that identifies ongoing costs associated with operating and maintaining the exhibit, including staffing, consumables, maintenance contracts, service-life and long-term replacement costs.

Mock-ups: Working models that are constructed simply, quickly, and at minimal cost in order to test a concept.

Original graphic content: Original illustrations, photography, maps, and other two dimensional exhibit content created specifically for an exhibit project.

Pre-Design Phase: The initial phase of a project that logically structures the work that follows; provides a clear understanding of the project's history, the park's resources, and the roles of other project team members and stakeholders; and ensures that it's goals are understood and realistically attainable within the budget, schedule, and other specified parameters.

Preferred Design Alternative: The design alternative that is chosen and/or developed either through group consensus or the NPS Value Analysis Process.

Production Documents: The phase of work where technical drawings and specifications are completed for moving the project into production.

Production Support: Creative and technical support during fabrication of the project to insure adherence to the project's design intent.

Production-ready Files: Digital graphic files that are complete and ready for output by the exhibit fabricator.

Project Brief: A consolidated overview of project information developed during the Pre-Design phase of work.

Project Goals: The project's interpretive objectives and the desired visitor experience.

Prototype: A working model that is more refined than a mock-up, and closer to the final product in material, construction, and operation.

Reference Package: A document consisting of written descriptions and graphic depictions that together provide the details that are needed for an artist or fabricator to produce each custom interpretive element.

Resource Package: A compilation of available, potential, and needed graphics, objects and media elements that may be considered for use in the exhibit.

Schematic Design: The phase of work where alternatives for the exhibition are explored and a preferred alternative selected.

Submittal: All samples, documents (i.e., drawings, schedules, facsimiles), electronic files, and other materials that together represent the level of development of work at a given time, and provided by the Contractor to the COR for review and approval.

Summative/Remedial Evaluation: Evaluation conducted after final installation, when the entire exhibition can be evaluated and final adjustments can be made.

Sustainability: Minimizing maintenance, operations, and life-cycle costs.

Task Order: See IDIQ Contract. In instances where the National Park Service Standard Exhibit Planning & Design Specifications are used for projects not involving an IDIQ contract, the term "task order" is equivalent to "contract."

Universal Design: The design of products and environments to be usable by all people, to the greatest extend possible, without assistance, adaptation or specialized design. See detailed description in the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

Value Analysis Process: An organized effort directed by a person trained in NPS Value Analysis Techniques to analyze the functions and effectiveness of the schematic design alternatives for the purpose of achieving the essential functions at the lowest initial and life cycle costs consistent with the required performance, reliability, quality and safety.

Visualization Materials: Sketches, renderings, presentation boards, booklets, models, computer simulations, or other media that provide a holistic view of the exhibition, that give a sense of how the exhibition will be experienced by the visitor, and that allow project team members to quickly grasp how individual elements work together.

Section 3. EXHIBIT PLANNING AND DESIGN PROCESS

3.1 Introduction

The planning and design process followed in this contract is organized into several phases of work. These phases are based on commonly used architectural terminology and methods for structuring work, with adaptations to fit the specialized requirements of exhibit development.

At the beginning of a project, goals are stated, parameters specified, and a series of tasks are outlined. Examples of project goals may include the project's interpretive objectives and the desired visitor experience. Examples of project parameters may include the budget, schedule, and architectural space. The goals and parameters, along with the decisions made at each step in the planning & design process, affect the tasks that follow, so it is critical that a logical sequence be followed. When new information results in changes to previous decisions, the Contractor shall discuss with the COR the impact on the project's development before proceeding.

Exhibit planning & design is an iterative process with a complexity requiring a team approach. Tasks typically involve specialized skills: creative ability, highly specialized technical skills, organizational skills, research ability, and subject matter expertise. Each task builds on those previously completed, adding detail and refinement. Milestones are established throughout the process as a means of communicating, evaluating, and recording the project's progress.

Planning as used in this Contract includes, but is not limited to, story development, content research, organization of content into databases, text writing, and other tasks associated with the interpretive content of an exhibit. An Exhibit Developer typically takes the lead with planning tasks. Design, as used in this Contract includes, but is not limited to, development of the physical organization of the exhibit space, integration of all exhibit elements into a cohesive presentation, functional characteristics and visual appearance of exhibit elements, and development of technical details for fabrication. An Exhibit Designer typically takes the lead with design tasks. Together, the Exhibit Developer and Exhibit Designer establish the primary creative direction and media approach for the project.

Phases of work are as outlined in 3.2 through 3.6

3.2 Pre-Design

In Pre-design, the Contractor shall gain a clear understanding of the project's history, the park's resources, and the roles of other project team members and stakeholders. Work in this phase focuses on preparing a solid foundation for all work that follows, insuring that the project is logically structured, and it's goals are understood and realistically attainable within the budget, schedule, and other specified parameters.

A. Review Government furnished materials

B. Travel to Site (see Section 4 Travel, Meetings, and Presentations)

(1) Orientation to park experience.

(2) Identify and document media and object resources at park.

(3) Orientation to architectural space.

(a) Document architectural space.

(4) Conduct Exhibit Planning Workshop.

(a) Analyze space and propose recommendations.

(b) Review existing planning documents.

(c) Review and/or develop design criteria.

(d) Review and/or develop themes, goals, and objectives.

(e) Define target audience.

(f) Define the desired visitor experience.

(g) Document results of workshop.

C. Identify sources for existing media resources.

(1) Develop Resource Package Abstract. (see Section 10 Resource Packages)

D. Develop Project Brief including:

(1) Current overview of project, including updated information and understandings.

(2) Identification and analysis of all project goals in terms of their effect on the development and successful completion of the exhibit.

(3) Analysis of the media budget (including review and/or development of a Class C Production Estimate), project schedule, and all other known parameters on the development and successful completion of the project.

(4) Life-cycle cost requirements.

E. Conduct Front-End Evaluation. (see Section 7 Exhibit Evaluation)

3.3 Schematic Design

Work in this phase is organized into two sub-phases: Schematic I and Schematic II. Schematic I includes development of several alternative schemes for organizing both the interpretive content and physical layout of the exhibits. Schematic II includes development of a preferred alternative. Major stories, exhibit elements and presentation techniques are illustrated and described.

A. Schematic I tasks include:

(1) Content Research

(a) Survey repositories of relevant resources.

(b) Develop Resource Package Level I (see Section 10 Resource Packages)

(2) Conduct Charette (see Section 4 Travel, Meetings, and Presentations)

(3) Develop Schematic I Document – unless otherwise specified in task order, develop three design alternatives including:

(a) Bubble diagrams.

(b) Written descriptions, including how each design alternative accomplishes the established project goals.

(c) Preliminary sketches.

(d) Class B Production Estimate and life-cycle cost estimates for each alternative. (see Section 6 Production Cost Estimates)

(4) Present Schematic I Plan. (see Section 4 Travel, Meetings, and Presentations)

(5) Prepare and submit written response to COR review comments.

B. Schematic II

(1) Participate in NPS Value Analysis process. (see Section 4 Travel, Meetings, and Presentations)

(2) Develop and submit Schematic II Document with Preferred Design Alternative including:

(a) Written exhibit walkthrough.

(b) Overall design approach including:

(i) Media style and appearance.

(ii) Universal design / accessibility approach. (see Section 8 Accessibility)

(c) Floor plan with individual exhibit areas and major elements identified.

(d) Sample elevations.

(e) Conceptual renderings.

(f) Resource Package Level II, with its content integrated into exhibit walkthrough description.

(g) Class B Production Estimate and life-cycle cost estimates for preferred alternative. (see Section 6 Production Cost Estimates)

(3) Present Schematic II Plan. (see Section 4 Travel, Meetings, and Presentations)

(4) Prepare and submit written response to COR review comments with next steps proposed.

3.4 Design Development

Work in this phase is organized into two sub-phases: Design Development I and Design Development II. Design Development I builds on the plan approved in the Schematic Design phase. Its emphasis is on confirming all major details of the design, and also includes continued content planning. Design Development II focuses heavily on developing all interpretive content in detail, with continued design refinement to insure effective presentation of the content within the exhibit.

A. Design Development I.

(1) Develop all individual exhibits including:

(a) Exhibit Design Drawings. (see Section 13 Exhibit Design Drawings)

(b) Sample graphic layouts / graphic approach / typography. (see Section 15 Graphic Layouts and Digital Graphic Files)

(c) Propose material, finish, and color selections. (see Section 14 Material, Color, and Finish Specifications)

(2) Establish Content Management Database (see Section 11 Content Management) including entries for the following:

(a) Interpretive purpose or objective for each exhibit.

(b) Text Level I (see Section 12 Text)

(c) Major images.

(d) Major artifacts and display objects. (see Section 18 Object Preservation and Protection)

(e) Major audiovisual and interactive elements. (see Section 19 Audiovisual and Computer Elements – Software, and Section 20 Audiovisual and Computer Elements - Equipment)

(f) Major specialty elements. (see Section 21 Tactile Exhibit Elements and Mechanical Interactives)

(3) Develop and submit Design Development I Report including:

(a) Overview including an exhibit walkthrough narrative.

(b) Compilation of all Design Development I work elements listed in paragraphs (1) and (2) above.

(c) Updated Class B Production Cost Estimate and life-cycle cost estimate. (see Section 6 Production Cost Estimates)

(4) Present Design Development I Report. (see Section 4 Travel, Meetings, and Presentations)

(5) Prepare and submit written response to COR review comments with next steps proposed.

B. Design Development II.

(1) Prepare and submit Design Development II Report including:

(a) Comprehensive Exhibit Plan. (see Section 11 Content Management)

(b) Image Schedule. (see Section 11 Content Management)

(c) Image Facsimile Sheets. (see Section 11 Content Management)

(d) Artifact and Display Object Schedules. (see Section 11 Content Management)

(e) Artifact and Display Object Facsimile Sheets. (see Section 11 Content Management)

(f) Audiovisual and Interactive Multimedia Report including:

(i) Treatments for AV programs. (see Section 19 Audiovisual and Computer Elements - Software)

(ii) Designs for interactive programs. (see Section 19 Audiovisual and Computer Elements - Software)

(iii) Audiovisual and interactive multimedia technical specifications. (see Section 20 Audiovisual and Computer Elements - Equipment)

(g) Reference Packages for all exhibit elements requiring them. (see Section 16 Reference Packages for Custom Interpretive Elements)

(2) Prepare and submit Design Development Graphic Layout Package. (see Section 15 Graphic Layouts and Digital Graphic Files)

(3) Prepare and submit material, finish, and color samples. (see Section 14 Material, Color, and Finish Specifications)

(4) Prepare and submit updated Exhibit Design Drawings. (see Section 13 Exhibit Design Drawings)

(5) Prepare and submit updated Class B Production Cost Estimate and life-cycle cost estimate. (see Section 6 Production Cost Estimates)

(6) Present Design Development II Reports. (see Section 4 Travel, Meetings, and Presentations)

(7) Prepare and submit written response to COR review comments.

(8) Conduct Formative Evaluation. (see Section 7 Exhibit Evaluation)

3.5 Production Documents

Work in this phase is organized into two sub-phases: Document Preparation and Pre-Production. Document Preparation includes preparation of all contract documents needed for potential offerors (exhibit fabricators) to understand and price the project. Pre-Production includes completion of all other outstanding design and content tasks. Work on the two sub-phases can proceed concurrently, but completion of Document Preparation will usually be required first. Some elements of Pre-Production may extend into the Production Phase of the project and involve coordination with an NPS contracted exhibit fabricator.

A. Document Preparation

The Contractor shall prepare and submit the following documents:

(1) Exhibit Design Drawings. (see Section 13 Exhibit Design Drawings)

(2) Content Management Database Production Schedules. (see Section 11 Content Management) including:
(a) Image Schedule.

(b) Artifact Schedule.

(c) Display Object Schedule.

(d) Specialty Element Schedule.

(3) Updated graphic layout package. (see Section 15 Graphic Layouts and Digital Graphic Files)

(4) Updated material and finish samples and specifications. (see Section 14 Material, Color, and Finish Specifications)

(5) AV equipment schedule and technical specifications. (see Section 20 Audiovisual and Computer Elements - Equipment)

(6) Updated Reference Packages for specialized exhibit elements in the fabricator's scope of work. (see Section 16 Reference Packages for Custom Interpretive Elements)

(7) Class A Production Cost Estimate and life-cycle cost estimate. (see Section 6 Production Cost Estimates)

B. Pre-Production

The Contractor shall perform the following work:

(1) The Contractor shall prepare and submit a completion schedule for all pre-production tasks.

(2) Develop Text Level III. (see Section 12 Text)

(3) Acquire images as specified in individual Task Orders. (see Section 17 Image Acquisition)

(4) Graphic Production. (see Section 15 Graphic Layouts and Digital Graphic Files)

(5) Update Reference Packages for specialized exhibit elements not in the fabricator's scope of work. (see Section 16 Reference Packages for Custom Interpretive Elements)

(6) Perform additional audiovisual and computer interactive development tasks as specified in individual Task Orders. (see Section 19 Audiovisual and Computer Elements – Software, and Section 20 Audiovisual and Computer Elements - Equipment)

3.6 Production Support

Work in this phase shall include creative and technical support during fabrication of the project, including Planning and Design Follow-ons to complete development of specific exhibit elements, Fabrication / Installation Support to insure adherence to the project's design intent, and Summative / Remedial Evaluation to review and evaluate the project. Typically, specific details for production support tasks are not determined until late in the planning and design of a project. The government may issue a task order modification to include this work once requirements are identified. (see Section 25 Production Support)

Section 4. TRAVEL, MEETINGS, AND PRESENTATIONS

4.1 Introduction

National parks are located throughout the United States and its territories. Most exhibit planning and design projects require that the Contractor travel to national parks to conduct site visits, present submittals, and participate in review and development work sessions. Based on a particular project's requirements, the Contractor shall travel to other sites as well to research, conduct evaluations, and participate in meetings with subject matter experts, partners, and stakeholders.

4.2 General Requirements

A. Travel

(1) The Contractor shall coordinate all travel with the COR.

(2) The Contractor's labor rate is half on travel days.

(3) All work days while on travel are 8 hour days.

(4) The Contractor shall bring all equipment they require while on travel and at the job site (for example, measuring instruments, computers, projectors).

(5) The Contractor shall provide for all of their own transportation while on travel.

(6) The Contractor shall adhere to Government per diem requirements while on travel.

B. Meetings and Presentations

(1) Develop agenda in coordination with COR.

(2) Discuss with COR expectations for work to be presented.

(3) Identify key participants for meeting.

(4) Unless otherwise specified by the COR, the Contractor shall facilitate meetings.

(5) Document discussions and outcomes.

(6) Determine along with COR whether documents will be submitted in advance or at the presentation meeting.

4.3 Specific Requirements for Design Charette and Exhibit Planning Workshops

Conduct a Design Charette. The purpose of a Design Charette is to brainstorm and fully explore all possible design directions for communicating the content of the exhibition.

A. Plan the Charette or Planning Workshop. Communicate with the COR, park and/or client to set the date, time, and meeting locations. Coordinate travel and meeting locations and times. Submit agenda to the COR for review and approval prior to the Charette or Planning Workshop. At a minimum, provide a description of the goals, an agenda, a list of materials to be provided by the Contractor for use by the participants, and any special facilities or Government-Furnished Equipment or materials needed.

B. Facilitate the Charette or Planning Workshop. Ensure that the facility and materials are ready for the Charette or Planning Workshop, facilitate the Charette or Planning Workshop, record and collect all relevant information, comments, ideas, and products generated.

C. Participate in a Charette or Planning Workshop. Attend Charette or Planning Workshop set up by the COR. Coordinate travel, times, and locations with the COR. Discuss the role, and review the background information provided. Take notes during the Charette or Planning Workshop and provide the COR with a copy of the notes for review and approval.

D. Prepare a Report. Prepare a report, using information and materials collected during the Charette or Planning Workshop, which summarizes the proceedings and submit to the COR for review and approval.

E. Brainstorming ideas for exhibit content, design, and presentation.

4.4 Specific requirements for Value Analysis

A. The Contractor shall travel to a specified site, or be available by telephone to participate in a Value Analysis workshop.

B. Provide information regarding the interpretive intent and proposed visitor experience desired.

C. Provide a Class B Production Cost Estimate.

D. Explain and verify estimated budget costs of the media elements.

E. Provide an estimate of life-cycle costs and reliability of elements.

F. Participate in the discussion regarding alternatives to the proposed interpretive plans.

G. Document the results of the Value Analysis Workshop using the recommendations and revisions contained in the Government-Furnished report to develop the selected design alternative.

Section 5. SUBMITTALS AND REVIEWS

5.1 Introduction

Submittals and reviews are the key communication points between the Contractor and the COR which document a project's overall progress and any remedial actions necessary to produce complete and acceptable deliverables. For the purpose of this contract, a submittal is defined as all samples, documents (i.e., drawings, schedules, facsimiles), electronic files, and other materials that together represent the level of development of work at a given time, and shall be provided by the Contractor to the COR for review and approval. At any point in the exhibit planning and design process the COR may require informal submittals of the Contractor's work in progress to document the current status and level of development of the project.

5.2 General Requirements.

A. Coordinate all of the Contractor's submittals and review them for legibility, accuracy, completeness, and compliance with contract requirements.

B. Cross-reference all details that occur multiple times in a single or in multiple documents for consistency and accuracy.

C. Ensure that all submittals are delivered to the COR as scheduled for review and approval. Submittals shall be accompanied by a transmittal describing all contents.

D. Unless otherwise specified elsewhere in this Contract or in the individual Task Order, provide three hard copies of each document and one copy of all electronic files.

E. The Contractor shall receive all review comments from the COR and take appropriate action as stated below:

(1) Approved Submittals – The Contractor shall ensure that all changes, revisions, or additions required by review comments are addressed and incorporated into future submittals.

(2) Rejected Submittals - When submittals are rejected, the COR will notify the Contractor, in writing, identifying the reasons for rejection. The Contractor shall ensure that the submittal is completed and/or revised as required and resubmitted within the time scheduled by the COR. Reasons for rejection include:

(a) Incomplete Submittals – Approval of the submittal is delayed because required elements are missing. The Contractor shall submit all missing elements. When all elements are received and accepted the COR will approve the submittal.

b) Unacceptable Submittals – The submittal is rejected due to poor quality of work or work that does not otherwise meet the established project goals. The Contractor shall submit new material.

5.3 Specific Requirements for Close-out Package.

At the conclusion of work, the Contractor shall return all Government Furnished Property and all other outstanding materials as specified in individual Task Orders. All material generated by the Contractor in the process of completing a task order is the property of the Government.

Section 6. PRODUCTION COST ESTIMATES

6.1 Introduction

Individual Task Orders will specify a target production cost or "design-to" figure for the project. Since budget formulations vary by project, the Contractor shall consult with the COR if there are any questions about what is included in the design-to figure. Generally, it will include all costs for fabricating, transporting, and installing exhibit structures and graphic elements. This includes all work specified in the "National Park Service Standard Fabrication Specifications, December 2006" and its references, including Project Management, Shop Drawings, Samples, Packing, Shipping, and Installation, and the cost of Project Closeout.

Depending on the project, it may also include media development costs such as image acquisition, original artwork, audiovisual, and multimedia programs, and non-interpretive elements such as an information desk and sales area fixtures. Architectural modifications to the building will be included in the design-to figure when such work is to be performed under the exhibit fabrication contract. Some costs may be split, for example, the cost of exhibit lighting fixtures may be part of the exhibit budget, while new electrical wiring required for the lighting is excluded.

The Contractor shall submit increasingly detailed production cost estimates as planning and design work proceeds. The purpose is to insure that the project, as designed, can be built within the available budget. Estimates shall be determined by the Contractor's professional experience and / or by researching the cost of similar recent projects. The Contractor may consult with exhibit production firms regarding costs, however Government regulations preclude such firms from bidding on the project if they have received project-specific details in advance of other potential bidders.

The National Park Service designates exhibit production cost estimates as class A, B, and C, based on the level of detail included in the estimate. They are described in 6.3 through 6.5 of this Section.

The Contractor shall also provide life-cycle cost estimates. The purpose of these estimates is to identify ongoing costs associated with operating and maintaining the exhibit.

6.2 General Requirements

A. All levels of production cost estimating shall adhere to the following criteria:

(1) The Contractor shall provide the most accurate pricing information available for the current stage of project development.

(2) The Production Cost Estimate shall be equal to or less than the design-to cost and shall be a realistic representation of the cost for producing the exhibit as designed. Estimates shall not be arbitrarily priced to match the target budget.

(a) All design changes that increase the Production Cost Estimate above the target production budget, whether initiated by the Contractor or requested by the Government, shall be documented by the Contractor and appended to the Production Cost Estimate as alternate / additional items.

(3) Production Cost Estimates shall be itemized by category and prepared in a computer file that can be translated or opened by the most current versions of Microsoft Word, Microsoft Excel, or FileMaker Pro.

6.3 Specific Requirements for Class C Production Cost Estimates

A. Unless specified otherwise in individual Task Orders, the Contractor shall provide a Class C Production Cost Estimate in the Pre-Design phase, that shall include the following information:

(1) The total area (including circulation space) in square feet of the exhibition space.

(2) The total exhibition cost and the cost of the exhibition per square foot. Where exhibit zones have been identified and the basic characteristics of the elements within those zones are known, a separate per square foot cost shall be specified for each zone. Examples of zones include, but are not limited to lobby, information / orientation space, sales area, and primary exhibition space.

(3) In instances where one or more high-cost exhibit elements have already been identified, they shall be priced as a separate line item. Examples include, but are not limited to, a complex exhibit case required to house a valuable and sensitive artifact, a large scale diorama, an original artwork mural, a topographic map with light program, and extensive use of AV or interactive programs.

6.4 Specific Requirements for Class B Production Cost Estimates

A. Unless specified otherwise in individual Task Orders, the Contractor shall provide a Class B Production Cost Estimate in the Schematic I phase. An updated Class B Production Cost Estimate shall be provided in the Schematic II, Design Development I, and Design Development II phases. Class B Production Cost Estimates are typically used in the Value Analysis process and shall include the following information:

(1) Class B Production Cost Estimates prepared in the Schematic I phase shall include, at a minimum, the estimated overall cost for each exhibit area identified in the exhibition plan. In instances where individual exhibits

or exhibit elements have already been identified, they shall be individually itemized.

(2) Class B Production Cost Estimates prepared in the Schematic II, Design Development I, and Design Development II phases shall be further itemized at a level of detail consistent with the current level of the exhibition's development as follows:

(a) A short description of proposed exhibits and major exhibit elements within each exhibit area.

(b) The cost associated with each proposed exhibit and / or exhibit element.

(3) Class B Production Cost Estimates shall include allowances for contingency, shipping, and installation as separate line items.

6.5 Specific Requirements for Class A Production Cost Estimates

A. Unless specified otherwise in individual Task Orders, the Contractor shall provide a Class A Production Cost Estimate in the Production Documents phase. Class A Production Cost Estimates shall be prepared based on the detailed specifications for all exhibit elements found in the Production Documents and shall include the following categories:

(1) Exhibition fabrication costs organized according to exhibit area, and itemized by exhibit or exhibit element within each exhibit area. The cost for an individual exhibit or exhibit element shall include the total materials, labor, and mark-up cost that an exhibit fabricator will charge for producing that item, or the cost for acquiring the item from a specialty sub-contractor.

(2) Media costs for all content purchased specifically for the exhibition, and not already accounted for in the exhibit planning and design budget. This includes but is not limited to:

(a) Image acquisition.

(b) Original artwork and photography.

(c) Audiovisual and interactive software.

(3) All other Graphic Production costs not included in the exhibit planning and design budget. These costs may include but are not limited to:

(a) High-resolution scanning.

(b) Image manipulation.

(c) Preparation of production-ready graphic files.

(4) Commercially obtained items including but not limited to:

(a) Audiovisual and other electronic equipment.

(b) Lighting equipment.

(5) Exhibit installation cost including:

(a) Fabricator site visits.

(b) Samples, mock-ups.

(c) Shipping.

(d) Exhibit installation travel and labor costs.

(6) Miscellaneous Production Costs itemizing all costs not otherwise accounted for. For example, shop drawings, as-built drawings and project close-out costs.

6.6 Life-cycle Cost Estimates

A. Unless specified otherwise in individual Task Orders, the Contractor shall provide a life-cycle cost estimate for the proposed design in the Schematic phase. Updated life-cycle cost estimates shall be provided in the Design Development and Production Documents phases. Life-cycle cost estimates shall include the following information:

(1) Operational costs associated with the exhibition including but not limited to:

(a) Staffing required to operate and maintain the exhibit on a daily basis.

(b) Costs for consumable items including but not limited to video projector bulbs, specialty exhibit lighting, printed hand-outs, touchable “discovery” items.

(c) Maintenance contracts.

(2) Long-term replacement costs associated with the exhibition including but not limited to:

(a) Service life and replacement cost for commercially available audiovisual, electrical and electronic equipment.

(b) Service life and replacement cost for custom made exhibit elements such as mechanical interactive devices.

(3) Lifespan of the exhibition including but not limited to:

(a) Effective life of the exhibition's physical structure and graphics.

(b) Effective life of the exhibition's content and message.

(c) Effective life of the exhibition's style of presentation.

Section 7. EXHIBIT EVALUATION

7.1 Introduction

Exhibit Evaluation is the process for better understanding the audience, and using this information to produce effective exhibits. Evaluations help exhibits better address visitors' needs and expectations while carrying out the parks' interpretive missions. Three typical stages of evaluation include:

Front-End Evaluation is conducted at the beginning of a project, when themes, goals, and initial design solutions are being considered. Front-End Evaluation seeks input from potential visitors to find out what kinds of information they already know, what visitors would like to know, and explores how exhibits can best present this interpretive information.

Formative Evaluation is conducted before the fabrication of exhibits, when mock-up testing can be carried out. Formative Evaluation can reveal problems with proposed designs and is especially important for interactive exhibits.

Summative/Remedial Evaluation is conducted after final installation, when the entire exhibition can be evaluated and final adjustments can be made.

7.2 General Requirements

A. Base Evaluation on Established Objectives for Exhibits

In addition to developing broad exhibition goals, the team must have clearly defined objectives for each exhibit that shall be identified during the Schematic Phase (and listed in the "Purpose" field of the Content Management database as "P" exhibit numbers). Objectives guide not only the way the exhibit is tested at the formative and summative/remedial stages, but direct the entire exhibit development process, including decisions about content, interpretation, media selection, and presentation techniques.

B. Define the Audience

The exhibit evaluation process requires the planning team to identify the intended target audience in terms of their ages, educational levels, and levels of entering knowledge of the subject matter of the exhibit (e.g., facts, concepts, controversies, comparisons).

C. Develop an Evaluation Methodology Plan

Prepare a written Evaluation Methodology Plan for conducting each evaluation phase as called for in the individual Task Order. The methodologies employed may include any or all of the following social science research and diagnostic tools: literature review, personal interviews, focus groups, brief questionnaires, observations, and tracking studies as well as other methodologies. Describe any Government-Furnished equipment or personnel and facilities required to

accomplish the evaluations. The plan shall be submitted to the COR for review and approval prior to finalization.

D. Prepare Office of Management and Budget (OMB) Expedited Approval Form

If conducting an evaluation that asks ten or more visitors the same type of questions, OMB must approve the evaluation. The Contractor shall prepare all paperwork associated with the OMB requirements for the expedited approval process. Note that the National Park Service (NPS) Office of Social Science and the OMB require a minimum 45-day approval process to review the evaluation questions and protocol or methodology prior to the actual evaluation study being conducted. For the purposes of scheduling, the Contractor shall budget a minimum of 45 days for obtaining NPS and OMB approval of their evaluation application. See the NPS Social Science website at www.nature.nps.gov/socialscience/survey.cfm to learn more about the guidelines and how to complete the required forms.

E. Conduct Evaluation

(1) Travel.

Travel to any sites called for in the Evaluation Methodology Plan.

(2) Logistics.

(a) Communicate with the Park to set the date, time, and meeting locations. Coordinate the travel, date, time, and meeting locations with the COR.

(b) Individual Task Orders may specify that the Contractor shall be responsible for recruiting the evaluation study participants.

(c) Individual Task Orders may specify that Contractors make logistical arrangements for use of non-NPS sites (e.g. local schools, museums, and other institutions).

F. Prepare Reports.

(1) Write Evaluation Report.

Collect and organize responses to the evaluations and prepare an electronic report that contains information regarding methodology used to gather information, demographics and size of study groups, and a summary and analysis of the information collected. This report shall be submitted to the COR for review and approval.

(2) Write Evaluation Implementation Plan.

The Contractor shall document how they propose to incorporate the results of the evaluation in the planning and design process to enhance the effectiveness of the interpretive media.

7.3 Specific Requirements for Front-End Evaluation

The Contractor shall conduct Front-End Evaluation, concentrating on getting input from potential visitors to find out what kinds of information they need and would like to know, and how this information could be presented in a meaningful, interesting, and cost-effective way. In addition to the General Requirements, the Contractor shall identify any objectives and concepts that will be especially challenging to communicate in the exhibits or that require special sensitivity in presenting to the public.

7.4 Specific Requirements for Formative Evaluation

The Contractor shall conduct Formative Evaluation on specific exhibit elements to determine design and/or content problems before they become a part of the final exhibition. Mock-ups and working prototypes shall be tested; the number of mock-ups and prototypes will be specified in individual Task Orders. In addition to the General Requirements, the Contractor shall do the following:

A. Propose exhibits to be evaluated for review and approval by the COR.

B. Build the mock-ups for selected exhibits to be tested, and ship them to testing site(s). Mock-ups shall be made from a variety of nondurable material (e.g., large-format, color inkjet prints mounted on foam core). All exhibit layouts shall consist of actual text and proposed graphics; any three-dimensional elements shall be identified in the layout.

C. The Contractor shall be responsible for removing the mock-ups from the test site(s) and disposition in accordance with the individual Task Order.

7.5 Specific Requirements for Summative/Remedial Evaluation

The Contractor shall conduct Summative/Remedial Evaluation studies to reveal problems that were not, or could not be, identified during the earlier stages of development and to determine the extent to which the original objectives have been met. In addition to the General Requirements, the evaluation shall including the following:

A. Evaluation of visitor traffic, identifying any crowd-flow, orientation, and signage problems (e.g. traffic study utilizing an annotated floor plan) and proposing remedial solutions.

B. Evaluation of exhibit effectiveness to determine the degree to which content is communicated with visitors. The Contractor shall propose remedial changes for those exhibits needing improvement.

Section 8. ACCESSIBILITY

8.1 Introduction

Exhibits planned and designed under this contract shall follow the latest published version of the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

8.2 General Requirements

No later than the Schematic II phase of work, the Contractor shall develop and present an overall accessibility strategy for the exhibition. This strategy shall be based on the Contractor's Schematic Design for the exhibition, and shall include:

A. A description of how the layout of the physical space and proposed exhibit elements follow the principles of Universal Design (Refer to the Programmatic Accessibility Guidelines for National Park Service Interpretive Media for a detailed description of Universal Design principles.)

B. A description of major accessible features of the exhibition for individuals with mobility, visual, hearing, and learning impairments.

8.3 Specific Requirements for Visitors with Mobility Impairments

See **Exhibit Guidelines: Mobility** in the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

8.4 Specific Requirements for Visitors with Visual Impairments

See **Exhibit Guidelines: Visual** in the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

8.5 Specific Requirements for Visitors who are Hard of Hearing or Deaf

See **Exhibit Guidelines: Hearing** in the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

8.6 Specific Requirements for Visitors with Learning Impairments

See **Exhibit Guidelines: Cognitive** in the Programmatic Accessibility Guidelines for National Park Service Interpretive Media.

8.7 Specific Requirements for Interior Directional and Information Signs

A. This section applies only to signs that designate permanent rooms and spaces, and signs that provide direction to or information about functional spaces of the building, such as signage for elevators and restrooms. It does not include interpretive exhibit graphics.

B. When design of permanent building signage is included in an exhibit project, the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, Chapter 7, Section 703 shall be followed.

C. Standard graphic symbols shall be used to identify accessibility of places, programs and other activities for people with various disabilities. Digital files for the standard symbols are available for download at: http://www.gag.org/resources/das.php

D. Text accompanying access symbols shall focus on the accommodation or service, not on who uses it. For example, "Accessible Entrance" may accompany the wheelchair symbol. The word “Handicapped” shall not be used on any signage.

Section 9. EXHIBIT VISUALIZATION

9.1 Introduction

The Contractor shall produce sketches, renderings, presentation boards, booklets, models, computer simulations, or other media as specified in individual Task Orders. This media shall be designed to visually describe the proposed exhibition to a diverse audience, which may include the project team, general public, sponsors, and stakeholders.

In contrast to other more technical documents that describe specific details, visualization materials provide a holistic view of the exhibition. They give a sense of how the exhibition will be experienced by the visitor. They also allow project team members to quickly grasp how individual elements work together and identify issues that may not be apparent when those elements are considered individually.

9.2 General Requirements

A. Individual Task Orders will either specify the media type and quantity for visualization materials or require the Contractor to propose the type of media to be developed.

B. The Contractor shall submit preliminary designs to the COR for review and approval. The Contractor shall make all changes and/or additions to the preliminary design prior to preparing the final visualization materials.

9.3 Specific Requirements for Renderings

A. The Contractor shall provide examples of the proposed style for the renderings to the COR for approval prior to beginning work. Size, acceptable media, mounting requirements, and other format information shall be approved by the COR in advance.

B. Renderings shall accurately depict the proposed exhibits and the architectural space in which they will be placed in perspective view.

C. The specified level of detail may range from impressionistic to photo realistic. Traditional media and styles of illustration may include: line art in pencil or ink, monochrome pencil sketches in line and tone, color pencil renderings, ink with color wash, marker renderings, pastel, gouache, acrylic, or other media approved in advance by the COR. Computer generated illustrations may include images generated in 3D modeling and rendering programs, illustration programs, and photo-composition programs.

9.4 Specific Requirements for Animated Walkthroughs

A. Prior to beginning work, the Contractor shall provide an example showing the level of detail and proposed rendering style for the walkthrough. The approximate

running time (or navigation method for interactive walkthroughs) shall be approved by the COR in advance.

B. The walkthrough shall accurately depict the proposed exhibits and architectural elements in three-dimensional space. Unless otherwise specified in individual Task Orders, camera points of view shall include an exhibit overview from above and an eye-level view as seen by an observer walking through the exhibition.

C. The walkthrough's storage media and format shall be proposed by the Contractor and approved in advance by the COR. Examples of storage media include CD-ROM, and DVD. Examples of formats include video DVD, Quicktime, MPEG2, Flash, and Quicktime VR.

9.5 Specific Requirements for Scale Models

The Contractor shall fabricate exhibit models and carrying cases specified in the task order. Individual Task Orders will specify the level of detail required for each model. All models shall conform to the following specifications:

A. Models shall be constructed at a level of detail consistent with their intended use, including, but not limited to:

(1) Study Models - The Contractor shall fabricate a scale model of all visitor center areas related to the project. The purpose of this model is to assist the project team in understanding the proposed exhibit layout and issues related to the use and possible modification of the visitor center. Models prepared for such purposes shall be accurate in form and dimension, but do not need to be fully representative of material, color, and architectural detail.

(2) Presentation Models - Based on the visual and narrative descriptions presented in the Schematic or Design Development phases of work, the Contractor shall fabricate a scale model of the visitor center, exhibit areas, and the exhibits within. The purpose of this model is to provide a dimensional representation of the form, placement, and style of the exhibits. Such models shall be accurate in form and dimension, contain facsimiles of object, graphic, and typographic content, and include indications of color, texture, and material.

(3) Selected Exhibit Models - The Contractor shall fabricate scale models of specific exhibits. The level of detail required will be specified in individual Task Orders.

B. To the extent specified in individual Task Orders, the Contractor shall revise exhibit models to reflect updates in the exhibition plan.

C. Model fabrication materials shall be approved by the COR prior to fabrication. Materials shall generally include combinations of the following: wood, chip board,

illustration board, paper, foam core, high density foam, and plastic sheet materials.

D. Unless otherwise specified in individual Task Orders, models of exhibit areas and contents shall be produced at 1⁄4" scale and models of selected exhibits shall be 1" scale.

E. The Contractor shall fabricate a storage and transport case for each model required in individual Task Orders. Cases shall be constructed to enable its contents to be transported safely and conveniently by air (as luggage) or by commercial courier service. The fragility and the ownership of the case's contents should be clearly indicated on the case exterior. All cases should include handles, and all case and model combinations in excess of 30 lbs shall include wheels to facilitate transport.

Section 10. RESOURCE PACKAGES

10.1 Introduction

Resource Packages begin with the preparation of a Resource Package Abstract in the Pre-Design Phase that identifies and organizes the media elements that will bring the exhibition to life. During the Schematic Design Phase, Resource Package Level I and Level II build upon the abstract by providing more detailed information about those media elements and organizing them into the appropriate thematic categories. After the Schematic Design Phase, the Content Management database incorporates and replaces Resource Package Level II as the final media elements are selected and obtained.

10.2 General Requirements

A. The Contractor is responsible for making sure that all the information they provide is accurate and reflects the most recent scholarship.

B. The Contractor shall provide general source information (described below) for every media element listed in the Resource Packages and/or proposed in their design solutions.

10.3 Specific Requirements for Resource Package Abstract.

Typically occurring as part of the Pre-Design Phase, the Contractor shall prepare the Resource Package Abstract. At this early stage, the abstract identifies the existing and potential media resources that could become the specific elements featured in the exhibition. The Resource Package Abstract shall include the following:

A. Identify and list any available artifact and graphic collections at the park.

B. Identify and list any potentially available artifact and graphic collections owned or managed by individuals and other institutions (e.g., special collection at the National Archives).

C. Identify and list any potential resources that might exist or that need to be created for featuring in the exhibition (e.g., new artwork, photography).

D. Note special challenges (e.g., new park with no collection) and special opportunities (e.g., an existing oral history collection of significant relevance).

E. Develop a bibliography, noting the books, periodicals, and other literature of potential use in developing the exhibition.

10.4 Specific Requirements for Schematic Design Phase

The Resource Package Abstract is further developed in the Schematic Design Phase, with Resource Package Level I associated with Schematic I, and Resource Package Level II associated with Schematic II.

A. Resource Package Level I

The Contractor shall organize the media elements according to the established themes that match the corresponding bubble diagram(s) prepared in Schematic I.

1. The Contractor shall submit two hard paper copies of the Resource Package Level I (e.g. three-ring binder, file folders) that shall be organized according to the established themes, and describe how the material is organized and managed in their work process (e.g. paper copies, database). The package shall include a diverse range of media types (e.g. artifacts, photographs, video footage, quotes, and potential low-tech interactives) that are existing and available, existing and potentially available, and those that need to be created. At this stage of the Resource Package, the goal is not to have every available and potential item listed but rather to provide enough of a sampling that corresponds to the bubble diagram(s) to demonstrate the choices available to the project team.

2. The Contractor shall provide the following information for every item listed in the Resource Package Level I: name of item, photocopy/thumbnail (for existing images and objects), original source, and description.

3. At the Contractor's request, the COR will return the two Resource Package Level I submittals submitted in the Schematic I phase of work for use in developing Resource Package Level II.

B. Resource Package Level II

The Contractor shall organize the media elements according to specific exhibit areas that match the corresponding floor plans, sample elevations, and conception renderings in Schematic II.

1. The Contractor shall submit two hard paper copies of the Resource Package Level II (e.g. three-ring binder, file folders) that shall be organized according to the established exhibit areas, and describe how the material is organized and managed in their work process (e.g. paper copies, database). The package shall include a diverse range of media types (e.g. artifacts, photographs, video footage, quotes) that are existing and available, existing and potentially available, and those that need to be created. At this stage of the Resource Package, the goal is to further refine the number of media elements proposed, and relate them to the corresponding floor plans, sample elevations, and conceptual renderings in Schematic II.

2. The Contractor shall provide the following information for every item listed in the Resource Package Level II: name of item, photocopy/thumbnail (for images and objects), original source, and description.

Section 11. CONTENT MANAGEMENT

11.1 Introduction

The purpose of Content Management is to organize, track, and manage all media elements to be featured in an exhibition, organized by unique identification numbers.

Content Management is a developmental process, and not a static file or document. It is adaptable to the needs of the project team. It may be useful in the early phases of the project as a way of organizing Resource Package elements. It is required during Design Development and all later phases. Potential exhibit elements identified during Resource Package work eventually find their place in the exhibit and are organized in a Content Management database and other documents.

The core of Content Management is the project database. This is a digital file which contains a record for each exhibit element. Categories of exhibit elements are described below (for example, they include labels, images, and display objects). Content Management focuses on the intellectual elements of the exhibit that are experienced by visitors, and does not include parts of the exhibit structures such as fasteners, panel materials, or lamps.

In addition to the database file, Content Management documents include printouts of database reports; organized collections of images and graphics on various media such as CDs, DVDs, negatives, transparencies, and photo prints; compilations of maps, diagrams, and technical drawings; records related to image and object acquisition, including records documenting use rights; and correspondence, phone logs, and other records related to exhibit elements.

The Contractor shall use the National Park Service standard numbering system for exhibit elements. The numbering system is described in 11.2 C.

The National Park Service has developed a database application called the *Museum Exhibit Planner* which is based on the standard numbering system, and which contains the exhibit element categories and fields of information required for National Park Service exhibit projects under this contract. The application also includes standard National Park Service exhibit terminology, and many functions for speeding project work and expediting project reviews. The *Museum Exhibit Planner* is available for download on the Harpers Ferry Center web site. The application runs under FileMaker Pro which is produced by FileMaker, Inc. The Contractor may use this application, or any other application which can be easily imported into a *Museum Exhibit Planner* application file.

The intent of the Content Management Database is to make the development of exhibits more efficient; to make it easier for reviewers to track the content and quality of work; and to contain and record important data related to exhibit elements for the life of the exhibition. The database is an important tool for the exhibit developer, but is not an end in itself. Data that is not useful for the project need not be entered, and fields that are not relevant for the project, at the discretion of the COR, need not be used.

11.2 General Requirements

A. Role of the COR.

The COR will provide guidance to the Contractor on how to use the Content Management database and other documents most efficiently for project needs. The COR will review and approve any alternative database programs or applications proposed by the Contractor. The COR will specify which data fields and reports are needed for the project, and which are not. For example, an exhibition without AV components would not need an AV Equipment Schedule. The COR will answer questions about the database application, and help resolve issues that arise related to the database.

B. Organization of the *Museum Exhibit Planner* (MEP) database application.

The primary purposes of the Content Management Database are facilitation of data entry, logical organization and tracking of data, and generation of necessary reports.

The *Museum Exhibit Planner* (MEP) database application is specifically designed to meet these requirements. The current version is a "relational" database that contains multiple tables to hold different types of records. (Earlier versions of the MEP were "flat file" databases that contained only one table.)

The opening screen of the MEP is a good place to see the basic organization. This Main Menu, or "Home" screen, is the starting point for all tasks. It's also a good place to go if you get lost. Look for the "Home" button in the upper left corner of many work screens. The Main Menu includes the following menu selections:

(1) Project

The **Project** button leads you into the Project table which holds *one* record — that record describes the exhibition you're planning. An "exhibition" is the umbrella term for all of the individual exhibit units taken together. Basic information, such as the project name, location, and a general description is entered here.

(2) Exhibits

The **Exhibits** button leads you into the database's "Exhibits" table that holds information specific to individual exhibits. An "exhibit" can be defined as a section of an exhibition that forms a unit, interprets a specific topic, and is viewed by a visitor at one stop. There is no hard-and-fast rule for how large or small an "exhibit" should be. However, exhibits with too many elements are difficult to manage in the database and numbering system. If there are 15 exhibits in the exhibition, then you will have 15 records in the Exhibits table. The table records each exhibit's name and

number, and can include an exhibit purpose, accessibility features, a cost estimate, and other data.

(3) Elements

The **Elements** button leads to the heart of the database. The Elements table contains all the discrete parts that comprise the exhibit content — the labels, images, artifacts, AV programs, and so on. If you had 200 labels, 100 images, 100 artifacts, and 100 display objects, and nothing else, you would have a total of 500 elements. Therefore, there would be 500 records in the Elements table.

The Elements button will lead to data entry or work screens designed to manage each of the different element types. The “Labels” data entry screen will have different fields from the “AV Programs” screen.

These first three tables —**Project**, **Exhibits**, and **Elements** form the three primary layers of the exhibition from the most general to the most specific. Key fields in the database relate one table to another. Database developers call these fields “primary keys” and “foreign keys.” It’s important not to disrupt these connecting fields.

(4) Graphic Layouts

The **Graphic Layouts** button represents another table. This table records all of the digital graphic layout files and output prints that will be produced. Typically, an individual Graphic Layout record represents one graphic panel in an exhibit, which in turn includes multiple elements such as text, images, and placeholders for objects. If you have 35 graphic layouts in your project, there will be 35 records in this table.

The Graphic Layouts table is especially useful as a tool for coordinating the graphic production work of exhibit developers, designers, and producers. For best results, the Graphic Layout number entered into the database should also be used as the computer file name when creating the panel layout in software such as Adobe InDesign. Elements such as labels and images include a database field for use in assigning them to a specific Graphic Layout.

(5) Sources

The **Sources** table allows users to list important contact data about organizations and individuals who will provide images, artifacts, objects, equipment, research, and other content resources for the project. (For example, a common source is The National Archives.) Using the Source table, the user can quickly find the phone number of a photographer or curator who is supplying images or objects for the exhibit. If the project is getting materials from 50 different sources, there will be 50 records in the

Source table.

(6) About *Museum Exhibit Planner* and Help

The last two buttons on the Home screen, **About *Museum Exhibit Planner*** and **Help**, provide basic information on the current version of the *Museum Exhibit Planner*, and link the user to the HFC web site for downloads and more information on the application.

C. Content Management Numbering System

A simple, logical, and consistent numbering system is essential to managing the many elements that go into an exhibition. Every element must have its own unique number to facilitate effective identification and communication of all elements throughout the planning, design, and fabrication stages of a project. Artifact schedules, image lists, text reviews – all depend on having an organized numbering system so team members can focus on content instead of spending extra time sorting out the hundreds of elements that make up an exhibition.

Moreover, the many simultaneous projects underway in the National Park Service by various project teams, both within the NPS and by contractors, necessitates having a consistently applied numbering system so that all team members are speaking the same language.

The numbering system organizes and tracks information at the “exhibit element” level of detail – individual labels, images, artifacts, etc. – as well as graphic layouts which can be thought of as compound elements containing other elements. The system is essential for keeping elements in the proper order in the database, and makes it possible to efficiently run queries, sorts, and custom reports.

The numbering system is based on the “Element Identification Number”, or EL ID No. Every EL ID No. has three parts, separated by hyphens. “LA-04-012” is an example of an Element Identification Number.

The first part of the number specifies types of exhibit content, identified by a two-letter prefix: LA for label, IM for image, etc. Each exhibit content element shall be identified by its appropriate exhibit element type. The middle two-digit number identifies the exhibit where the content element is located. The ending three-digit number specifies the item number of the element within the exhibit.

The Contractor shall not use a different numbering system. Minor modifications to the numbering system for a particular project are acceptable with the advance approval of the COR. For example, it may be useful to add a suffix to an item number, as in “LA-04-012a”. Such modifications may be in the best interest of the project, and have no negative effects on the operation of the database. Exhibit element categories and the numbering system are specified as follows:

(1) Exhibit Element Types.

LA Labels

Exhibit text intended to be read by visitors, including titles, primary labels, captions, and quotations. (see Section 12 Text)

IM Images

Individual photographs, illustrations, art, maps, charts, diagrams, or other display images.

GL Graphic Layouts
Panel layouts which usually contain multiple graphic elements such as labels, images, and placeholder indicators for display objects. (see Section 15 Graphic Layouts and Digital Graphic Files)

AR Artifacts

Artifacts are categorized as cataloged items from NPS resources or loan items from other museums, historical associations, libraries, etc. (see Section 18 Object Preservation and Protection) They include historic objects for display made by human hands such as arrowheads, cannonballs, pottery, baskets, hats, chairs, medals, money, and original documents. Natural objects that are historic or may require conservation treatment or special environmental conditions may be included under the artifact category.

DO Display Objects.

Display Objects are categorized as purchased and/or non-cataloged items used in the exhibit to enhance the story. (see Section 18 Object Preservation and Protection) They include objects for display that are not artifacts, such as specimens, models, props, reproductions, replica artifacts, and non-historic sculptures.

EP Electronic Programs.

Computer, audiovisual, lighted, or other programs with informational or interpretive content. Examples are videos, audio messages, computer interactive programs, and lighted terrain model programs. (see Section 19 Audiovisual and Computer Elements - Software)

EE Electronic Equipment.

Audiovisual or computer equipment or devices which will run, control, or display electronic programs. Examples are DVD players, LCD monitors, and proximity sensors. (see Section 20 Audiovisual and Computer Elements - Equipment)

SE Specialty Element.

Tactile and mechanical interactive elements which need to be tracked but do not fit well into other categories. Examples include flip books, optical viewers, and low-technology interactive devices. (see Section 21 Tactile Exhibit Elements and Mechanical Interactives)

(2) Numbering system.

LA-04-012
The first part of the EL ID No. is the Element Type. It occupies two character spaces for the acronyms of the element categories as described in C-(1) above. In the example shown here the "LA" indicates this element is a label.

LA-**04**-012
The second part of the EL ID No. is the Exhibit Number; it occupies two numeric spaces (single-digit numbers are preceded by a zero). The exhibit number refers to a specific exhibit within the exhibition. In this example the element is in the fourth exhibit in the exhibition. It is strongly recommended that exhibit numbers be assigned in such a way as to limit the number of items in any one exhibit to less than 100. (In most cases it is better to organize an exhibition into a larger number of small exhibits instead of a few very large ones. The efficiency of the numbering system, and the planning database, is reduced when broad theme areas of an exhibition are considered single exhibits for numbering purposes. If another layer of organization is necessary, several smaller exhibits with a common theme may be grouped together into an "exhibit area". The best time to finalize the organization of the exhibition and assign exhibit numbers is at the beginning of the Design Development phase.)

LA-04-**012**
The third part of the EL ID No. is the Item Number. It occupies three numeric spaces (single-digit and two-digit numbers are preceded by zeroes or a zero, as in "003" or "024"). It is best to have item number sequences reflect some logical order in the exhibit, such as from top to bottom, or from left to right. Using this method, "LA-09-001" would likely be the title of Exhibit 9. Item numbers may repeat within an exhibit if there is a logical reason for doing so. For example, image "IM-04-024" and label LA-04-024 may be assigned to indicate that the label is a caption for the image.

Item Numbers need not be consecutive. It is permissible to leave gaps—perhaps to leave room for items to be added later. It is also useful to use 100, 200, 300, 400,…series item numbers which correspond to sections of an exhibit. Example 1: all elements with 100 series numbers might be located on the top half of an exhibit, with 200 series numbers on the bottom half. Example 2: all 100 series elements in Exhibit 4 might be located on or associated with graphic layout GL-04-100.

A useful protocol is to use Item Number "999" to indicate an element which does not yet have a place in the exhibit. Such items stack up at the end of an exhibit awaiting the opportunity to be placed or deleted. Also, if there are several images that are candidates for a place in the exhibit, but the final selection has not yet been made, identical Item Numbers may be assigned to hold the choices on a temporary basis.

Each part of the Element Identification Number is a separate field in the *Museum Exhibit Planner* application, but the program also contains a calculation field which automatically composites the number into a single answer.

D. Data Fields

Many data fields have been developed for the Content Management System. Some fields are required for nearly all projects; others are highly specialized or optional. Exploring the *Museum Exhibit Planner* application is the best way to understand the fields and how they are used. For each individual task order, the COR will advise the Contractor on fields for which data entry is required.

E. Database Reports

The *Museum Exhibit Planner* application includes numerous report layouts which are generated automatically by the program, and which will meet the needs for deliverables under this contract when the required data has been correctly entered. Reports are a useful way of viewing project data, but it should be remembered that none of them contain all the data in the database. The digital database file is the principal deliverable and measure of planning work; the reports are derivatives of it.

Unless otherwise specified in individual task orders, reports noted with an asterisk (*) are required. Any additional required reports will be specified in individual task orders.

<u>Comprehensive Exhibit Plan (Narrative Plan) *</u>
The Comprehensive Exhibit Plan report is a narrative compilation of all elements in an exhibition, arranged in order according to the Element ID Numbers. It includes all labels, and descriptions of all other elements. A reviewer can get a

good sense of the content and direction of a project by reading the Comprehensive Exhibit Plan while also looking at the project drawings and floor plans. The Comprehensive Exhibit Plan is an overview; while it describes all elements, it does not include all of the details associated with each exhibit element.

Comprehensive List
The Comprehensive List is a short report containing one line for each element. It is useful for getting a quick look at the total number of elements, and serves like a project index.

Text Only
This report includes the complete text of all exhibit labels. It's useful for focusing on text editing, review of content, and for working on translations.

Element Schedules
Element schedules contain detailed information needed for acquisition of graphics and objects, and for exhibit fabrication. Typically, schedules are generated for Images*, Graphic Layouts*, Artifacts*, Display Objects*, Specialty Elements*, Electronic Programs*, and Electronic Equipment*. Other specialized schedules shall be generated as required in the individual Task Orders. New, revised or renamed reports may be developed in the future.

The fields displayed in the database Schedules are set in the *Museum Exhibit Planner* application, and can be generated and printed automatically. For those not using the *Museum Exhibit Planner,* the COR will provide printed report pages showing sample data and how it should be arranged. All printed schedules and reports shall show page numbers and print dates on each page.

Facsimile Sheets *
Facsimile Sheets include pictures of images, artifacts, or display objects. These sheets are generated by the *Museum Exhibit Planner* application and include Element ID Numbers, and data fields for these elements.

For Image (IM) Facsimile Sheets, the picture should be of sufficient quality to allow identification of the content and shall include the entire graphic image, even if only a portion of the image is used. At a minimum, the Facsimile Sheet shall include the Element ID Number, park name, project name, dimensions, and description of the image.

Artifact (AR) and Display Object (DO) Facsimile Sheets shall include at a minimum a picture of the artifact or object, the Element ID Number, park name, project name, description of the object, dimensions, and any notes that impact the placement of the object within an exhibit case or setting.

Database reports are made available to all team members and stakeholders, including those who do not have the parent database software, through the use

of hard copy printouts and/or PDF files, as specified in individual Task Orders. The Contractor shall prepare the printed copies and PDF files for this purpose.

F. *Museum Exhibit Planner* Application Versions and Platform

The Contractor may choose to use any or all aspects of the application that facilitates work and meets requirements of this contract and the individual task order.

If using the *Museum Exhibit Planner* application, the Contractor shall use the latest version of the application available from Harpers Ferry Center via its web site, or directly from the COR. The Contractor shall be responsible for purchasing a compatible version of FileMaker Pro with which to run the *Museum Exhibit Planner* application.

Content Management data submitted in any other computer program shall be submitted by the Contractor in a format which can be imported into the current *Museum Exhibit Planner* by the COR. The Contractor shall supply written directions for importing data from the Contractor's database into the *Museum Exhibit Planner*. A cross reference to field names must be provided.

The *Museum Exhibit Planner* application is a cross platform database which produces a file that will read and write on both PC and Mac platforms. All data can be transferred to other platforms through conversion to Excel data and by other means. All text in the program can be exported to Microsoft Word or other text files.

The *Museum Exhibit Planner* is a desktop tool used by a limited number of media professionals in the National Park Service. For many years FileMaker Pro has been the most efficient tool for NPS exhibit planning, but it is not part of the Servicewide suite of software designated for use by NPS staff as a whole. The NPS has adopted Enterprise Application software standards for these broad uses. In order to be compliant with these standards, the Harpers Ferry Center may transition FileMaker Pro applications to other platforms such as Microsoft SQL or Oracle at a future date. The Contractor will be notified of any new standards or platforms, and will be given advice and procedures for migrating data or providing deliverables.

Because the *Museum Exhibit Planner* is a template that runs within FileMaker Pro, the Contractor may customize functions of the database to suit project needs or working styles. The COR can provide advice on getting the most out of the database tools while meeting all project needs.

11.3 Specific Requirements for Pre-Design and Schematic Design Phases

The Content Management database is not a required process or deliverable in the Pre-Design and Schematic phases of work. However, the Contractor may use the *Museum*

Exhibit Planner application or other database applications during these phases to begin assembling the Resource Package and facilitate its transitioning to the Content Management database and other documents required in later phases. Facsimile Sheets can be submitted as elements of the Resource Package. Later, these elements can be easily given Element ID Numbers and take their places in the Content Management database without being imported or entered again.

11.4 Specific Requirements for Design Development Phase

Under Design Development I the Content Management database shall be established if not created earlier. The Contractor shall write purpose statements for all exhibits. Working titles for all exhibits, and placeholder descriptions of primary labels shall be provided. Major images and objects shall be selected and their data and pictures entered into the database. Treatment statements for programs, interactives, and artwork shall be provided. It is usually good to select one exhibit for further development to test the coordination between team members and to get a better feel for the operation of the database and its interface with the designers. All of these tasks are embodied in the database, and database reports may be viewed by the COR and reviewers.

Under Design Development II text placeholders shall be fleshed out into draft text for all exhibits. Images and artifacts shall be selected for all exhibits. Treatments shall be fully written; they may be submitted separately as Word files, with executive summaries in the database. Reference materials (for example: stock footage, images) for treatments shall be included in AV Treatment documents, but not typically entered into the database.

At the end of Design Development II all content shall be organized into the Content Management database, and the transition from the Resource Package to the database shall be complete. All exhibit elements shall be numbered and consistently used for all project documents. As is the nature of exhibit work, some information will still be developing. The contractor is responsible for updating the data fields in the database as elements are modified, added, or deleted.

11.5 Specific Requirements for Production Documents Phase

The Contractor shall update the Content Management Database to reflect the finalization of all exhibit elements for production purposes. Treatments and reference packages shall be in their own separate folders, envelopes, notebooks, or other containers, and all shall be clearly labeled with their names and Element ID Numbers.

11.6 Specific Requirements for Production Support Phase

A. If specified in individual Task Orders, the Contractor shall update the Content Management documents during the Production Support phase. All content changes necessitated during production shall be updated in the Content Management database.

B. If specified in individual Task Orders, the Contractor shall update the Content Management documents after exhibit installation is completed. Information shall be updated for purposes including, but not limited to, formative or summative evaluation, exhibit rehabilitation, and maintenance of use rights and attribution data.

Section 12. TEXT

12.1 Introduction

The Contractor shall develop and prepare all written text that will appear in the exhibit, including and not limited to titles, labels, quotations, and instructions. Write text with reference to the project goals, exhibit objectives, the resource package, and the Schematic Design phase planning documents.

Exhibit text is integrally related to other elements experienced by visitors. Text must relate to and function within the specific physical and graphic design of the exhibit as a whole. Text must contribute to achieving the project goals, but it cannot contribute as a stand-alone element. In every instance, the Contractor shall consider whether text is the most effective means of achieving project goals.

Beginning in the Design Development phase, the Contractor shall provide increasingly refined drafts of text, showing the text's relationship to other exhibit elements through the exhibit walkthrough narrative, Content Management Database, graphic layouts, and design drawings.

12.2 General Requirements

A. HFC Style Guide

All exhibits planned and designed shall be produced in accordance with the latest available version of the Harpers Ferry Center Editorial Style Guide, as specified in Attachment C, and available online at:
www.nps.gov/hfc/pdf/hfc-style-guide-2007.pdf

B. Proofread all text

The Contractor shall proofread all text for correct spelling, punctuation, and grammar prior to submittal.

C. NPS standards for interpretation

The NPS assumes that our audiences seek more than information and learning, that they seek meaningful experiences. Text, in coordination with all exhibit elements, shall create opportunities for visitors to form their own intellectual and emotional connections with meanings and significances inherent in the park's resource; see Attachment D, NPS Interpretive Development Program, and available online at:
www.nps.gov/idp/interp/index.htm

D. Hierarchy of text

The Contractor shall establish a consistent hierarchy for the content and purpose of text in the exhibit. This hierarchy shall be reflected in the appearance of text in

the exhibit's design. The Contractor shall define characteristics of each level in the hierarchy, such as length, style, parallel construction, etc. Examples of hierarchical levels are: titles, subtitles, primary and secondary body text, interpretive captions, identification captions, and text for interactives.

E. Sources

(1) The Contractor shall be responsible for making sure that all information provided in exhibit text is accurate and reflects the most recent scholarship.

(1) The Contractor shall be responsible for ensuring that exhibit text is not plagiarized and does not violate intellectual property rights law.

F. Audience.

Unless a more specific audience is defined for an exhibit or portions of an exhibit, the general visiting public is the audience for whom exhibits are produced, not scholars, historians, scientists, or administrators. The Contractor shall indicate the reading level at which the text is aimed, and use available standard software tools for evaluating the reading level (i.e., Klesch-Kincaid Reading Level); the Contractor shall inform the COR of the software tool used and the results obtained.

G. Length of text.

The Contractor shall make every effort to keep text brief while achieving project goals.

H. Quotations.

All quotations must be attributed, verified, and the source documented in the Content Management Database.

I. Multiple perspectives.

Text, in coordination with all exhibit elements, must accommodate and present multiple points of view regarding the resource, and rely on accurate information and avoid the tendency to exaggerate or slant information to present a personal or particular viewpoint; see Attachment D, NPS Interpretive Development Program.

J. Interpretive writing style.

Interpretive writing is required for many exhibit labels rather than informational or creative writing. For the purpose of this contract, "informational writing" is defined as providing factual data for reference or other use; "creative writing" is artistic expression in written form and evokes sensory impressions and images; and,

"interpretive writing" draws from technical, informational, scientific, historical, and cultural sources; it incorporates creative techniques and seeks to connect readers emotionally and intellectually to the meanings and significance of the resource(s). A successful NPS exhibit uses accurate and comprehensive information, but conveys more than facts. The writing style for exhibits shall be interpretive and informative; see Attachment D, NPS Interpretive Development Program.

12.3 Specific Requirements for Multi-Lingual Exhibits

For many visitors to national parks English is not their first language, or they may have no knowledge of the English language. Unless otherwise specified in the individual Task Order, for exhibits requiring other languages in addition to English the text shall be translated and displayed as follows:

A. Text at all levels of the hierarchy must be provided in each language, including captions, text for interactives, and map labels.

B. Text in all languages shall be equally accessible.

12.4 Specific Requirements for Design Development Phase

A. For Design Development I, the Contractor shall develop Text Level I, to include:

(1) An explanation of the text hierarchy in the Design Development I report.

(2) Sample text to demonstrate style and reading level for one representative exhibit showing each hierarchical level of text in the Design Development I report.

(3) Proposed text for the highest levels of the hierarchy (typically titles or main section headers), entered into the Content Management Database. (see Section 11 Content Management)

(4) A description of text intent for labels, entered into the Content Management System database; text intent shall be entered within brackets to distinguish it from actual proposed text.

B. For Design Development II, the Contractor shall develop Text Level II, to include:

(1) A complete draft of all text, entered into the Content Management Database.

(2) A measure of the text's reading level overall and, if appropriate, for particular labels.

(3) All draft text shall be placed into the graphic layouts in the Design Development Graphic Layout Package. (see Section 15 Graphic Layouts

and Digital Graphic Files) Level II text must appear identically both in the Content Management Database and in the graphic layouts.

(4) Individual Task Orders may require the Contractor to submit updated versions of Level II text, incorporating revisions and editorial direction as specified by the COR. Updated Level II text must appear identically both in the Content Management Database and in the graphic layouts.

12.5 Specific Requirements for Production Documents Phase

For the Pre-Production phase, the Contractor shall develop Text Level III, to include:

A. All text in final Text Level III form, incorporating revisions and editorial direction from reviews of Text Level II submittals, as specified by the COR.

B. A measure of the text's reading level overall and, if appropriate, for particular labels.

C. All final text shall be placed into the graphic layouts in the production-ready files. (see Section 15 Graphic Layouts and Digital Graphic Files)

D. Individual Task Orders may require the Contractor to submit updated versions of Level III text, incorporating revisions and editorial direction as specified by the COR. Updated Level III text must appear in updated production-ready files.

12.6 Specific Requirements for Production Support Phase

Individual Task Orders may require the Contractor to submit updated versions of Level III text, incorporating revisions and editorial direction as specified by the COR. All updated text shall be placed into updated production-ready files. (see Section 15 Graphic Layouts and Digital Graphic Files)

Section 13. EXHIBIT DESIGN DRAWINGS

13.1 Introduction

The Exhibit Design Drawing Package is one component of a set of Production Documents that specify technical information required by an exhibit production firm (fabricator) to build the exhibit. Exhibit Design Drawings describe how the exhibition is organized within the allotted architectural space, its physical shape, dimensions, materials, and construction details.

Exhibit Design Drawings (prepared by the Planning and Design Contractor) are distinguished from shop drawings (prepared by a fabricator) by their level of detail. They must, at a minimum, communicate design intent. This includes details necessary to describe the size, configuration, final appearance and operation of the exhibit. Details specifying *how* the exhibit is built, for example specific construction techniques and hardware, shall be necessary only to the extent required to clarify design intent, and to describe non-standard, unusual or critical materials and processes.

Exhibit fabricators use the design drawings first to price the project, and then as a guide in preparing shop drawings with further technical details. Exhibit fabricators working on National Park Service projects are required to follow standardized exhibit fabrication specifications. To avoid duplication of effort or unnecessary redesign, the Planning and Design Contractor shall refer to National Park Service Standard Fabrication Specifications, December 2006 (see Attachment B) when preparing Exhibit Design Drawings.

13.2 General Requirements

A. Exhibit Design Drawings shall be coordinated with other project documents to insure consistency in identifying individual exhibit elements. All labeling and numbering of elements shall conform to the exhibit Content Management specifications. Section 11, Content Management .

B. The latest and most accurate available version of the architectural floor plan drawings shall be used as a guide when developing exhibit design drawings.

(1) When individual task orders specify a site visit, the Contractor shall measure and document the existing architectural space.

C. All drawings shall be legible when printed at 11” x 17”.

D. All drawings shall be prepared at a standard architectural scale appropriate to the information being communicated on the drawing.

(1) All drawings shall include a graphical scale indicator.

(2) All printed copies of drawings shall be output at the original scale or at a standard multiple of the original scale such as 25%, 50%, or 200%.

E. All exhibit design drawings shall include a legend with the project name, phase of work, issue date, and revision number.

F. The Contractor shall provide paper copies and computer discs when drawings are computer-generated. All computer-generated drawings shall be submitted both in their original file format and in a version translated into DXF format. Each disc shall be identified with the project name, the park, and the name and version of the program used to produce the drawings.

13.3 Specific Requirements for Schematic Design Phases

A. At a minimum, the Contractor shall prepare and submit diagrams and plan-view drawings of the exhibition's content and physical layout at a level of detail consistent with the current level of exhibit planning and design. During Schematic Design this shall include:

(1) For Schematic I, diagrammatic studies (Bubble Diagrams) for each design alternative. The diagrams shall be organized to best fit the project according to one of the following methods:

(a) As labeled shapes (bubbles) and lines identifying exhibit themes and concepts and how they relate to each other. The weight, importance, or emphasis of individual elements shall by indicated by their size and location on the diagram.

(b) As labeled shapes (bubbles) on an exhibit floor plan, indicating the approximate size and location of each major exhibit area.

(2) For Schematic II:

(a) A floor plan with an accurate footprint of all proposed exhibit areas. All exhibit areas and major exhibit elements within each area shall be labeled on the floor plan.

(b) Elevation views for a minimum of two exhibit areas or major exhibit elements selected to communicate the proposed appearance and style of the exhibition.

13.4 Specific Requirements for Design Development Phases

A. For Design Development I, the Contractor shall prepare and submit drawings of the developed design. The primary use of these drawings is for project team review and approval, and to serve as the basis for Production Documents in a later phase of work. Designs shown in the drawings shall meet the specifications for Exhibit Structures identified in Section 22. At a minimum, the drawings shall include:

(1) Cover sheet that identifies the project name, project location and site plan, date of submission, and table of contents.

(2) Floor plan of the facility showing location of the exhibition site, the primary exhibit area with name and location of each exhibit, and references to exhibit detail drawings.

(3) Floor plans and elevations of existing conditions indicating any modifications such as demolition and new construction.

(4) Plan and elevation views of each exhibit identified by title and number, and showing exhibit structures and all graphic panels, artifact locations, and all other interpretive content with identification numbers. Include a floor plan on each sheet indicating the location of the exhibit depicted.

(5) Proposed construction details for unusual exhibit structures. (see Section 22 Exhibit Structures)

(6) Reflected ceiling plan of the exhibition space showing proposed lighting plan.

(7) Proposed electrical plan of the exhibition space indicating floor and wall outlets and ceiling junction boxes.

(8) Proposed colors, materials, and finishes.

(9) Proposed furnishings or other “off-the-shelf” items and equipment.

(10) Location of remote AV equipment.

B. For Design Development II, the Contractor shall prepare and submit a revised set of drawings incorporating all planning and design changes and additional details developed during this phase of work.

13.5 Specific Requirements for Production Documents Phase

A. As part of document preparation within the Production Documents phase of work, the Contractor shall prepare and submit final exhibit design drawings. Designs shown in the drawings shall meet the specifications for Exhibit Structures identified in Section 22. The drawings shall, when combined with other Production Documents submitted by the Contractor, provide sufficient information for exhibit production contractors to price and build the exhibition. At a minimum, the drawings shall include:

(1) Cover sheet that identifies the project name, project location and site plan, date of submission, and table of contents.

(2) Floor plan of the facility showing location of the exhibit site, the primary exhibit area with name and location of each exhibit, and references to exhibit detail drawings.

(3) Floor plans and elevations of existing conditions indicating any modifications such as demolition and new construction.

(4) Plan and elevation views of each exhibit identified by title and number, and showing exhibit structures and all graphic panels, artifact locations, and all other interpretive content with identification numbers. Include a floor plan on each sheet indicating the location of the exhibit depicted.

(5) Typical construction details including plan, elevation, sectional, and isometric views.

(6) Construction details of unusual exhibit structures.

(7) Reflected ceiling plan of the exhibit area(s) identifying existing and new lighting fixtures and hardware. Include a lighting schedule for all new lighting indicating type of fixture, track, or associated hardware required.

(8) An electrical plan of the exhibit area indicating floor and wall outlets and ceiling junction boxes, power circuits, and power load for each exhibit or audiovisual element.

(9) Specification of all colors, materials, and finishes to be used.

(10) Identification of all furnishing or other “off-the-shelf” items and equipment including the name, address, and telephone number of the supplier and/or manufacturer of each item.

(11) Location of remote AV equipment and routing of AV signal wiring.

(12) Exhibit power, lighting and AV control switch locations.

(13) Description of exhibit start-up, operation and shut-down procedures.

B. The Contractor shall revise and resubmit the final exhibit design drawings to address review comments provided by the COR.

C. The Contractor’s name and other identifying information shall be removed from the final submittal of Exhibit Design Drawings intended for release to potential exhibit production offerors.

Section 14. MATERIAL, COLOR, AND FINISH SPECIFICATIONS

14.1 Introduction

The visual theme or style of an exhibition shall be proposed by the Contractor during the Schematic II phase of work, with refinements and detail added during the Design Development phases. In the Production Documents phase, the Contractor shall provide final specifications for all visible elements in the exhibition.

14.2 General Requirements

A. The Contractor shall consider cost when making material / finish selections. The goal is to achieve an effective balance between resources allocated to the exhibition's physical structure and its interpretive media elements.

B. Materials, colors, and finishes shall be selected for the most effective visual presentation, to reinforce the exhibition's content, durability, and sustainability. In no case shall an exhibit's visual appearance compete with or obscure its educational, interpretive or informational messages.

14.3 Specific Requirements for Schematic Phase

A. The overall design approach for the exhibition shall be developed in the Schematic II phase of work. The Contractor shall, at a minimum, prepare and submit elevation views in color for two exhibit areas or major exhibit elements. The views shall be selected to communicate the proposed appearance and style of the exhibition.

B. As specified in individual task orders, the Contractor shall prepare and submit exhibit visualizations in the form of scale models, perspective renderings, and or animated walk-throughs. (see Section 9 Exhibit Visualization)

14.4 Specific Requirements for Design Development Phase

A. The Contractor shall submit samples of specific materials, colors, and finishes for the exhibit. All samples shall be of sufficient size, shape, and configuration to provide an accurate representation of their appearance in the exhibit. Samples obtained from the manufacturer or prepared by the Contractor include, but are not limited to:

(1) Plastic laminates (example: Formica).

(2) Solid surfacing materials (example: Corian).

(3) Paint samples (including surface luster).

(4) Wood, metal, glass, plastic, ceramic, fabric, carpet or other materials with natural or applied finishes.

(5) Color chips to specify:

(a) Screenprinting inks – use Pantone 1000 chips.

(b) Digitally output graphics – use CMYK process color chips or Pantone system chips. Since color information is embedded in digital files, physical samples shall only be required on a case-by-case basis for critical color matching as determined by the COR.

B. Materials and finishes specified for use inside of artifact display cases shall conform to Attachment F, National Park Service Exhibit Conservation Guidelines. Refer to Technical Note 5 in the Guidelines. (Also see Section 18 Object Preservation and Protection)

C. Samples shall be assembled onto a Material, Color, and Finish Sample Board that includes the following additional information:

(1) All samples shall be labeled with the manufacturer's identification name and/or code number.

(2) Samples for all paints, finishes and materials shall include the vendor's name and contact information.

D. The Contractor shall submit two identical copies of the Material, Color, and Finish Sample Board in the Design Development I phase of work.

14.5 Specific Requirements for Production Documents Phase

Unless otherwise specified in individual task orders, the Contractor shall prepare and submit a total of three Material, Color, and Finish Sample Boards as part of the Production Documents as follows:

A. All materials, colors, and finishes shall match the corresponding specifications in the Exhibit Design Drawing package.

B. At the Contractor's request, the COR will return the two sample boards submitted in the Design Development phase of work. The Contractor shall revise and resubmit the two existing sample boards along with a third, new copy. All three copies shall include identical information.

C. If the Contractor does not request return of the existing sample boards for revision, the Contractor shall prepare and submit three new Material, Color, and Finish Sample Boards.

Section 15. GRAPHIC LAYOUTS AND DIGITAL GRAPHIC FILES

15.1 Introduction

Two-dimensional exhibit graphics convey interpretive messages, describe objects or other exhibit elements, and provide general information within the exhibition. Exhibit graphic elements may include stand-alone text, photographs, illustrations, maps, or any combination of text and images within a graphic design layout. They are produced and mounted for display using a variety of processes.

Graphic layouts and digital graphic files must be structured to accommodate the selected design approach and production process. For a design approach specifying a direct digital output process such as ink jet print, all text and images are combined in a single graphic layout, output as a single print, and mounted on a single panel. This panel would be considered one exhibit graphic element.

Another design approach may require that text be applied to a surface by silk-screening, etching, or other specialty process, and that separate graphics be individually applied or mounted to the same surface. In this case, the text and each graphic is an individual exhibit graphic element. Each would require a separate graphic layout. In addition, an exhibit drawing would be required showing the placement of all the elements in relation to each other.

Graphics created for display on screens or by projection are not included in this specification.

15.2 General Requirements

A. Create all two-dimensional exhibit graphic elements within the exhibition unless otherwise specified in individual Task Orders. Graphic layouts shall be prepared for each exhibit graphic element according to the following criteria:

(1) Graphic layouts shall be designed for legibility and to meet requirements as specified in Section 8, Accessibility. In developing the graphic layouts the Contractor shall take into account the proposed exhibit environment in which the graphics will be viewed, including but not limited to lighting levels, viewer distance and angle of view, possible obstructions, and shadows from other exhibit elements.

(2) The graphic design shall support the clear communication of information. Labels and captions shall be clearly associated with the objects and images they are describing. Care shall be taken to insure that the design does not imply incorrect information due to the misleading selection, juxtaposition, or alteration of images.

(3) Typography is an integral part of an exhibition's design. It is only successful if it promotes an understanding of the exhibit's message. Since communication is the primary purpose of text in an exhibition, use

of typographic styles that are distracting or difficult to read shall be unacceptable. The Contractor shall make font decisions on a case-by-case basis to compliment the exhibition's subject matter and to be compatible with the overall design approach. The National Park Service standard fonts – Frutiger and NPS Rawlinson - are acceptable and often appropriate, especially for orientation and NPS Identity elements. They may also be used for interpretive exhibits, but they are not required.

(4) An individual graphic layout shall be prepared for each exhibit graphic element that will be output and mounted separately during production. Exception: similar small elements may be ganged together on one graphic layout to improve efficiency as long as clear instructions are provided.

(5) All graphic layouts shall be prepared using appropriate software application programs as specified in 15.5.A of this Section.

15.3 Specific Requirements for Design Development Phase

A. Design Development I

The Contractor shall prepare, at a minimum, one sample graphic layout for each type of exhibit graphic element in the exhibition as follows:

(1) All sample graphic layouts shall demonstrate a proposed graphic design approach, including the specification of standard sizes, layout formats, color palette, and typography.

(2) FPO copies of key images shall be included in the sample graphic layouts. Secondary, or less prominent images may be indicated by outlines or other visual representations only to the extent that the proposed graphic design approach remains clear.

(3) Sample text (Level I - titles and descriptions) shall be included in the sample graphic layouts. Secondary or smaller text elements may be indicated by greeking or other visual representations only to the extent that the proposed graphic design approach remains clear.

(4) Outlines or images shall be included to indicate the location of three-dimensional objects or other exhibit elements, if any, to be mounted on the graphic layout.

(5) The size and shape of sample graphic layouts shall match the corresponding exhibit graphic elements shown in the Design Development I exhibit elevation drawings.

(6) Sample graphic layouts shall be included in the Design Development I Report as full color prints scaled such that the proposed graphic design

approach is clearly communicated. Each print shall include the following information:

(a) Identification of the type of exhibit graphic element shown (for example: “area introduction” “primary text panel”, “reader rail graphic”).

(b) Scale at which printed, with 100% equal to the final production size in the exhibit.

(c) Finish size, and production process.

(d) Issue date or revision number for version control.

B. Design Development II

The Contactor shall complete all graphic layouts for the exhibition in draft form during this phase of work as follows:

(1) The graphic design approach, including the specification of standard sizes, layout formats, color palette, and typography shall be finalized and applied to all graphic layouts.

(2) FPO copies of all proposed images shall be included in the graphic layouts. Outlines or other graphic representations of images are not acceptable.

(3) Text Level II (draft text) shall be included in the graphic layouts. The latest available version of the actual exhibit text is required. Greeking or other generic representations of text is not acceptable.

(4) Graphic layouts shall indicate, via an outline or image, the location of three-dimensional objects or other exhibit elements, if any, that will be mounted on the two-dimensional exhibit graphic element. These outlines or images shall include the statement: “Do Not Print – For Placement Only”, and labeled with the appropriate exhibit identification number.

(5) Graphic layouts shall be coordinated with other planning and design documents as follows:

(a) Graphic layouts shall be identified according to the standard numbering system specified in Section 11, Content Management . The entire graphic layout shall be identified with a “GL-“ prefixed number. Each title and text block within the graphic layout shall be identified with a separate “LA-“ prefixed number. Each image (photograph, illustration, map) within the graphic layout shall be identified with a separate “IM-“ prefixed number. Production-ready graphic ornaments (rules, borders, decorative elements)

embedded in the layout shall not be numbered. Each number shall be a unique identifier for a single element and shall be used consistently in all planning and design documents to identify only that element.

(b) The size and shape of graphic layouts shall match the corresponding exhibit graphic element shown in the exhibit design drawings, and the identifier numbers shall be consistent between the exhibit design drawings and the graphic layouts.

(6) Hard copies of each graphic layout shall include, at a minimum, the following information printed in the margin:

(a) Graphic Layout (GL) number.

(b) Computer file name.

(c) Issue date or revision number for version control.

(d) Scale at which printed, with 100% equal to the final production size in the exhibit.

(e) Dimensions for the final production size.

(7) All graphic layouts shall be assembled into one document called the Design Development Graphic Layout Package. Unless otherwise specified in individual Task Orders, the Contractor shall submit three 11" x 17" hard copies and one PDF electronic version of the document. The document shall include the following:

(a) A Graphic Layout Schedule including, at a minimum, each graphic layout's identification number, finish size, and production process.

(b) A full color print of each graphic layout scaled such that all images and text are legible. In instances where graphic layouts scaled to fit a standard 11" X 17" page are not legible, the Contractor shall provide a reference print of the entire graphic layout sized to fit a standard page, followed on subsequent pages by enlarged, legible sections of the graphic layout.

15.4 Specific Requirements for Production Documents Phase

A. Document Preparation.

The Contractor shall update the Design Development Graphic Layout Package based on review comments, and to incorporate the latest available versions of exhibit text and images. This work shall conform to the specifications in 15.3.B. of this Section.

B. Pre-Production.

The Contractor shall provide Graphic Production services as follows:

(1) Prepare all Production-Ready Digital Graphic Files as specified in 15.5 of this Section.

(2) Complete all production-quality scans required for the exhibition as specified in 15.6.B. of this Section.

(3) Adjust color balance, saturation, image sharpness, and perform other minor touch-up work as needed for all production-quality scans.

(4) Prepare all Final Image Files for the exhibition. This shall include blending of multiple source images, application of color, transparency, or a combination of other effects to match the visual intent of the corresponding low-resolution placement image, and adjusting image for correct cropping and bleed.

(5) Insert Text Level III into all graphic layouts and proofread all text.

(6) Print review copies of all graphic layouts and assemble into one document called the Pre-Production Graphic Layout Package. Unless otherwise specified in individual Task Orders, the Contractor shall submit three 11" x 17" hard copies and one PDF electronic version of the document. The document shall include the following:

(a) A Graphic Layout Schedule including, at a minimum, each graphic layout's identification number, finish size, and production process.

(b) A full color print of each graphic layout scaled such that all images and text are legible. In instances where graphic layouts scaled to fit a standard 11" x 17" page are not legible, the Contractor shall provide a reference print of the entire graphic layout sized to fit a standard page, followed by enlarged, legible sections of the graphic layout on subsequent pages.

(c) Unless otherwise specified in individual Task Orders, lower resolution FPO versions created from the Final Image Files shall be acceptable for printing the Pre-Production Graphic Layout Package document.

15.5 Requirements for Digital Graphic Files

A. Software.

The following software programs are acceptable:

(1) Adobe InDesign version CS, CS2, or CS3 for graphic layout files.

(2) Adobe Photoshop version CS, CS2, or CS3 for image (raster based continuous tone) files.

(3) Adobe Illustrator version CS, CS2, or CS3 for vector based graphic illustration files.

(4) Adobe Acrobat for PDF (portable document format) files.

Newer versions of these programs that are released during the term of this contract shall also be acceptable unless otherwise stated in individual Task Orders. Substitution of other software programs shall be approved, in advance, by the COR.

B. File Structure

Throughout the exhibit development process, all files generated by the Contractor shall follow a standardized structure for each file type. File types, structure, and their naming convention shall be as follows:

(1) Graphic Layout Files include all of the components - images, text, and graphic ornaments - for a single exhibit graphic element that will be output and mounted separately during production. These files shall be created in Adobe InDesign, and shall be organized into layers determined by the document's content. All graphic layout files shall be RGB files with the Adobe RGB 1998 profile embedded. In addition:

(a) All files shall be created at 50% or greater of final printed size.

(b) All linked files must be correctly referenced and available to the graphic layout file for the file to print correctly (see 15.5.B.(4) of this Section).

(c) Image and label identification numbers shall be located on or adjacent to the corresponding elements on the layout, and placed on a separate layer.

(d) Other supporting information shall be located in the document margin, and shall be placed on a separate layer. This data includes, but is not limited to, the file name, date or revision number, and document scale in relation to the final output.

(e) All graphic layout files prepared for final output shall include crop marks and sufficient bleed to accommodate the specified production process.

(f) Each file shall be named to correspond with the identification number assigned in the Content Management Database. File names shall follow the format:

GL-00-000Work.indd for Design Development level graphic layouts.

GL-00-000Prod.indd for Production level graphic layouts.

(2) Image Files (continuous tone, or raster files) shall be structured according to their specific use during the exhibit development process. A separate folder shall be used for each file type, and each file shall be named to correspond with the image identification number assigned in the Content Management Database. The file types include:

(a) Raw Image Files - Unimproved scan files, supplied files, and digital camera raw files (in Adobe DNG format). These files may be 16 bits per channel or 8 bits per channel RGB.

i. File names shall follow the format: **IM-00-000Raw.** The appropriate file extension shall be appended to the file name.

(b) Working Image Files - Layered PSD files (Photoshop native file format). These are the files in which all work has been done. All work shall be done on layers and be available for further editing. All editing functions shall be done on adjustment layers where practical. Where this is not the case, a duplicate of the original image layer shall be made and the edits shall be applied to it. These files may be 16 bits per channel or 8 bits per channel RGB, shall be scaled to final use size and resolution, and shall have the Adobe RGB 1998 profile embedded.

i. File names shall follow the format:
IM-00-000Work.psd

(c) FPO Image Files - Low-resolution versions of images used for developmental purposes during exhibit planning and design. The FPO image files are linked to the graphic layout files prior to final output of the exhibit graphics. These files shall be produced at a quality level sufficient to provide a clear representation of the image as it will appear in the final exhibit, balanced against the need for a manageable file size that can be easily stored,

transmitted and printed. Compressed image formats such as JPG are acceptable for FPO files. The FPO images shall be cropped and scaled to match the Final Files they are representing. These files shall be 8 bits per channel RGB and shall have the Adobe 1998 profile embedded.

i. File names shall follow the format: **IM-00-000FPO.** The appropriate file extension shall be appended to the file name.

(d) Final Image Files - Production-ready image files created by flattening the final version of Working Files. These are the files linked to the graphic layout files for final output. These files shall be 8 bits per channel RGB and shall have the Adobe 1998 profile embedded.

i. File names shall follow the format: **IM-00-000Prod.** The appropriate file extension shall be appended to the file name.

(3) Vector Illustration Files – These files shall be created in Adobe Illustrator, and shall be organized into layers determined by the content in the document. In addition:

(a) Supporting information shall be located in the document margin, and shall be placed on a separate layer. This data includes but is not limited to the file name, and date or revision number.

(b) Vector illustrations shall be designated as images in the Content Management Database. File names shall follow the format:

IM-00-000Dev.ai for Design Development level vector illustrations.

IM-00-000Prod.ai for Production level vector illustrations.

(4) Linked Files are raster or vector files required by the primary file in order to print correctly. Graphic layout files often require one or more linked image files. Supporting files shall always be linked to, not embedded in, the primary file. Approved formats for linked files are tif, pdf, psd, and ai.

(5) PDF Files are used for electronic distribution, viewing and printing of review documents during exhibit development. Unless otherwise approved in advance by the COR, PDF files shall not be used for final exhibit production output. The PDF file name shall be identical to the file from which it was created, with the **.pdf** extension replacing the original file's extension.

C. Color Management

The design and production processes shall be color managed from beginning to end using ICC (International Color Consortium) and ColorSync color management as follows:

(1) All raster image and vector files shall be RGB files.

(2) Color working space shall be Adobe RGB (1998). The Adobe RGB (1998) profile shall be embedded in all RGB files.

(3) Color settings for InDesign and other Adobe applications shall be US Prepress Defaults. Important settings in this context are:

Enable Color Management
Working Space: RGB; Adobe RGB (1998)
Conversion Options:
Engine: Adobe ACE
Intent: Relative Colorimetric
Use Black Point Compensation
Transparency Blend Space (for InDesign files): Document RGB

All soft proof color evaluations shall be made in this environment.

(4) The D50 standard viewing conditions (ANSI PH2.30-1989 For Graphic Arts and Photography - Color Prints, Transparencies, and Photomechanical Reproductions - Viewing Conditions) shall apply, and all hard copy color evaluations will be made in this environment.

(5) All defined colors (Swatches) in InDesign and Illustrator shall be set to Color Type: Process.

D. Fonts

(1) The Contractor shall provide all font files necessary to view, edit, and print all graphic layouts produced under this contract.

(2) OpenType is the standard approved font technology for all Digital Graphic Layout files. Type 1, TrueType, or any other font technology shall not be acceptable unless approved in advance by the COR.

(3) The Contractor is responsible for meeting all software licensing requirements of the font copyright owner. The Contractor shall provide valid software licenses permitting the receiver of the submittal to install

the fonts on a computer system for purposes of viewing, editing, and printing all graphic layouts produced under this contract.

(a) The requirement to provide font licenses may be waived upon written notice by the COR to the Contractor that the receiver of the submittal already owns a valid font license. In this case, submittal of the font files shall still be required.

E. Organization of Multiple Files

The Contractor shall use a consistent system for organizing the multiple files generated during the course of the project. Unless otherwise approved by the COR in advance, files shall be submitted on CD-Rom disk, DVD-Rom disk, or similar portable media as appropriate for the volume of data, in a universal format that can be read by current Microsoft Windows and Apple Macintosh operating systems.

Files shall be organized as follows:

(1) By physical disk. Each disk shall be clearly labeled with the project name, date, brief description of contents, and the level of exhibit development, for example “Design Development II” or “Pre-Production”. The total number of disks shall be indicated, for example: “Disk 1 of 5” for a series of 5 disks, or “Disk 1 of 1” for a single disk. Each disk shall be accompanied by a print-out of the disk directory listing all folders and files on the disk.

(2) The root directory of Disk 1 shall contain a Font directory, which shall contain all font files required for production of the exhibit graphics. Other files related to the exhibition as a whole, such as “ReadMe” files and PDF versions of printed submittals shall also be located in the root directory of Disk 1.

(3) A folder shall be established for each exhibit area, consistent with the project organization established in the Content Management specifications. For example, a folder titled “Exhibit 01” shall include sub-folders with all files associated with exhibit area 01.

(4) Within each exhibit area folder, sub-folders shall be established for each file type associated with the exhibit area as follows:

(a) Graphic layout files (GL- series),

(b) Image files (IM-series raster images) with nested sub-folders as follows:

i. Sub-folders within the image file folder shall be created as necessary for Raw, Work, FPO, and Final image files as exhibit development proceeds.

(c) Vector illustration files (IM-series vector files).

(d) PDF, reference, or other miscellaneous files relating to the specific exhibit area, if necessary.

15.6 Requirements for Image Scanning

A. FPO Scans:

For Position Only (FPO) images are used in graphic layouts prior to the Production Documents phase of work. Scans for FPO images shall be produced at a quality level sufficient to provide a clear representation of how the image will be used in the final exhibit, balanced against the need to maintain a small file size that can be easily stored, transmitted and printed. Compressed image formats such as JPG are acceptable for FPO image scans.

B. Production-quality Scans:

(1) Prior to scanning, the Contractor shall review the resolution, cropping, and final size of the production image that will be created from the scan. The Contractor shall notify the COR if the quality of the source image is not suitable.

(2) Scans requiring extreme enlargements of the source image shall be performed using a process and equipment capable of providing high quality results. This shall include the wet mounting of transparencies and negatives and/or use a drum scanner when necessary. The Contractor shall consult with the COR to determine when specialized processes and equipment are necessary.

(3) Unless otherwise specified by the COR, the following scanning specifications shall be followed:

(a) Resolution: 150 – 200 dpi at final image size and cropping.

(b) Color Space: RGB or Grayscale.

(c) Profile: Adobe RGB (1998) or Gray Gamma 2.2.

(d) File type: PSD, TIFF, PDF with no compression, or DNG.

Section 16. REFERENCE PACKAGES FOR CUSTOM INTERPRETIVE ELEMENTS

16.1 Introduction

Custom Interpretive Elements are defined as any exhibit element that requires creative design, and/or artistic development and execution by an artist, illustrator, photographer, sculptor, craftsman, or other creative or technical specialist. Custom interpretive elements include but are not limited to original illustrations, artwork, maps, sculptures, models, dioramas, scrims, and life-sized figures.

Reference Packages are developed to provide the artist or fabricator with everything that they need to accurately create the custom interpretive element. A separate Reference Package is required for each two- and three-dimensional custom interpretive element that is to be fabricated for use in the exhibit, and for which specifications are not included elsewhere in the design package. Each Reference Package must provide written descriptions and graphic depictions that together provide the details that are needed to produce the interpretive element.

An audiovisual storyboard is one example of an interpretive element that is specified elsewhere in the contract, and that does not require a separate Reference Package.

16.2 General Requirements for Reference Packages

The Reference Package shall contain a description of the work to be performed, and samples of the proposed style. The Contractor shall research, identify, locate, gather, originate, and validate reference materials necessary to develop an accurate depiction of the subject matter. At a minimum, the material shall contain a narrative description of design and interpretive intent, final production specifications including final size and required resolution, examples, and samples of style. Other visual materials include documents and photographs that will serve the purpose of developing the custom interpretive elements by showing a representation of the item, and its color, size, shape, and accurate positioning. The Contractor shall provide as much detail in the Reference Package as is needed to communicate design intent.

The Contractor shall develop a Reference Package for each unique custom interpretive element. This is the default requirement for all Task Orders, unless otherwise specified in the individual Task Order.

16.3 Specific Requirements

A. Requirements for Maps.

The Reference Package shall include the following:

(1) Intent, purpose, and message to be communicated.

(2) Style and general look of map to be developed.

(3) Time period to be represented in the map.

(4) Crop marks for the area to be shown.

(5) List of items to be included on the map, including but not limited to all text, labels, symbols, roads, drainages, natural features, vegetated zones etc.

(6) References for locations of all items to be included on the map.

(7) General type styles and color palette to be used.

(8) Samples of the graphics and exhibits surrounding the map so that it can be designed to integrate well.

B. Specific Requirements for Illustrations and Artwork

The Resource Package shall include the following:

(1) Intent, purpose, and message to be communicated.

(2) Samples of proposed style.

(3) Time period.

(4) Location.

(5) Subject matter and content intent.

(6) Season, time of day and lighting intent.

(7) Common and scientific name, sex, stage of life, size, and pose for animals included.

(8) Common and scientific names and size of plants, fungus, and other organisms included.

(9) Name or identity of specifically known people to be included.

(10) Age, gender, ethnicity, hair and eye color, size and stature, pose, style of clothing and associated accoutrements for people to be illustrated.

(11) Size, materials, architectural features and perspective of buildings or structures to be included.

C. Specific Requirements for New Photography.

The Reference Package shall include the following:

(1) Intent, purpose, and message to be communicated.

(2) Location and contact information for staff at the location if needed.

(3) Samples of proposed style.

(4) Subject matter.

(5) Season and time of day.

(6) Lighting intent.

(7) Art direction.

(8) Photographic media required (i.e., color, black and white, over- or underexposed, other special effects, minimum film format requirements, minimum digital requirements).

(9) Final size that the image will be used in the exhibit.

D. Specific Requirements for Natural History Models

(1) The Reference Package shall include the following specifications for the characteristics of the specimen:

(a) Common and scientific name of specimen.

(b) Sex, stage of life (larva, juvenile or adult).

(c) Size.

(d) Pose.

(e) Season if it affects the appearance.

(f) Associated elements, such as habitat pieces.

(2) The Reference Package shall specify the following about the production:

(a) Style of model, such as photographs of the desired style.

(b) Proposed fabrication technique.

(c) Finish treatment: monochrome, duotone, integral color, or realistically surface colored.

(d) Details of attachment, placement, and integration with other exhibit components, such as copies of the exhibit design drawings that refer to the model.

E. Specific Requirements for Cultural History Models

(1) The Reference Package shall include the following information for the characteristics of the item:

(a) Size.

(b) Shape.

(c) Placement.

(d) Materials, textures.

(e) Associated elements.

(2) The Reference Package shall specify the following about the production:

(a) Style of model, such as photographs of the desired style.

(b) Proposed fabrication technique.

(c) Finish treatment: monochrome, duotone, integral color, or realistically surface colored.

(d) Details of attachment, placement, and integration with other exhibit components, such as copies of the exhibit design drawings that refer to the model.

F. Specific Requirements for Life-Sized Figures

(1) The Reference Package shall include the following specifications and references for the characteristics of the person:

(a) Name or identity if specifically known.

(b) Age, gender, ethnicity, hair and eye color.

(c) Size and stature, including height and weight.

(d) Pose.

(e) Time-period and style of clothing.

(f) Hairstyle.

(g) Associated accoutrements.

(2) The Reference Package shall specify the following about the production:

(a) Style of figure, such as photographs of the desired style.

(b) Proposed fabrication technique.

(c) Finish treatment: monochrome, duotone, or realistically colored.

(d) Clothing treatment: cast clothing or natural textile fabric.

(e) Details of attachment, placement, and integration with other exhibit components, such as copies of the exhibit design drawings that refer to the life-size figure.

G. Specific Requirements for Dioramas

(1) The Reference Package shall include the following specifications and references for the characteristics of the diorama:

(a) Common and scientific name, sex, stage of life, size, and pose for each animal.

(b) Common and scientific name, size of plants, fungus, and other organisms.

(c) Physical and spatial relationships between specimens and their habitat.

(d) Season.

(e) Associated elements.

(2) The Reference Package shall specify the following about the production:

(a) Style of model, such as photographs of the desired style.

(b) Proposed fabrication technique.

(c) Finish treatments.

(d) Details of attachment and integration within the diorama and with other exhibit components.

Section 17. IMAGE ACQUISITION

17.1 Introduction

The Contractor shall procure and obtain the actual images and reproducible images to be used in the interpretive media. Image acquisition typically occurs during the Production Documents phase, but may occur at any stage of the planning and design process as specified in the individual Task Order. The Contractor is strongly encouraged to seek images from open source or public domain resources whenever possible.

17.2 General Requirements

The Contractor shall acquire all images identified in the Content Management Database with the appropriate rights for all interpretive media when specified in the individual Task Order.

A. Technical Requirements.

The Contractor shall provide images, transparencies, artwork as a physical reproducible or duplicate of the full image that can be used for high resolution scanning and remain with the archives of the project. Acceptable physical reproducibles or duplicates include 4” x 5” or 8” x 10” black and white negatives, 8” x 10” black-and-white prints, 4” x 5” or 8”x 10” color transparencies, or 35mm color slides.

If only a digital scan can be obtained, the image file must be at the optimum resolution recommended for the particular output device based on the final size of the image as defined in the Content Management Database and Graphic Digital Layouts, and adhere to the digital resolution and scan requirements stated in Attachment K, Suitable Standards for Digital Photographic Image Files.

The Contractor shall ensure that the image has the required quality needed for the use of the image as planned in the exhibit. If a graphic cannot be obtained or is not of sufficient quality, the Contractor shall be responsible for specifying an acceptable replacement image.

B. Legal Requirements.

The full-frame image, as shown by the facsimile, is required unless otherwise noted. Each image shall have the appropriate documentation of the use rights procured; see Attachment I, Sample Letter for Ordering Graphics and Requesting Use Rights.

(1) General Use

The Contractor shall acquire images and stock footage with a signed agreement in the name of the National Park Service for one-time, non-

exclusive use for the lifetime of the project for all images for all interpretive media unless otherwise authorized by the COR.

(2) Commercial Use

The Contractor shall acquire images and stock footage for the interpretive media with a signed agreement in the name of the National Park Service for unlimited, non-exclusive, commercial use in perpetuity unless otherwise authorized by the COR. Refer to Section G of the Contract, “Rights In Data-Special Works” Clause.

Section 18. OBJECT PRESERVATION AND PROTECTION

18.1 Introduction

The Organic Act of 1916 which created the National Park Service, as well as subsequent legislation, requires the NPS to "preserve unimpaired the natural and cultural resources" left in our care. Owing to the nature of our exhibits and the importance of the artifact resources we may choose to place in those exhibits, NPS conservation standards are designed to provide maximum practicable preservation for these materials while on display.

Artifacts are categorized as cataloged items from NPS resources or loan items from other museums, historical associations, libraries, etc. Display Objects are categorized as purchased and/or non-cataloged items used in the exhibit to enhance the story.

Artifacts require the highest level of preservation criteria. Display Objects, while important and sometimes costly to replace, are in a lower category of preservation concern.

18.2 General Requirements

A. Conservation concerns should be integrated into the exhibit plan early. Sufficient time and resources shall be identified in the project schedule and budget to address artifact related issues.

B. The Contractor shall research the availability of appropriate artifacts and display objects.

C. In consultation with other project team members, the Contractor shall select artifacts for display and record resource information for each artifact in the Resource Packages and Content Management Database.

18.3 Requirements for Specifying Artifacts and Display Objects

When specifying artifacts and display objects for a project the contractor shall perform the following:

A. Categorize artifacts and display objects separately within the Resource Packages and Content Management Database.

B. Provide the following information for each artifact and display object:

(1) A unique assigned exhibit identification number, prefixed with AR- for artifacts and DO- for display objects.

(2) An image of the object, preferably in color, with physical description, including measurements, weight (if pertinent), and object name.

(3) Source, including contact information for NPS and lending institutions.

(4) Required loan requirements and conditions, if applicable.

(5) Current location of the artifact or object.

(6) Catalog number, HFC Registrar's number if known, and any other identification number that may exist.

(7) Object condition, i.e. new, intact, damaged, broken, missing parts, etc., and conservator's treatment recommendations.

(8) Special mounting, environmental, and security requirements for display.

(9) Lead time for acquiring artifact or object.

(10) Special handling requirements; shipping/transportation requirements, if applicable.

(11) Acquisition cost, if purchased.

(12) Object location in the exhibit.

18.4 Requirements for Protection of Artifacts in Exhibits

The Contractor shall follow practices specified in the NPS Exhibit Conservation Guidelines for displays in which artifacts are present. Cases must be made of appropriate materials and meet NPS standards for air exchange, lighting, ballasting, object environment, and security. While individual product recommendations in the Guidelines may change, the Guidelines do provide established and well-researched principles designed to enhance object preservation. Specifications for lighting of exhibit artifacts are included in the Lighting specification for this contract (see Section 23 Exhibit Lighting). Questions regarding an individual product or concept shall be addressed to the project conservator through the COR.

18.5 Requirements for Protection of Display Objects in Exhibits

Display objects include, but are not limited to models, props, natural history specimens, reproductions, and sculptures. Due to the variety of objects and their intended interpretive purpose within the exhibit, requirements for their protection shall be determined on a case-by-case basis. The effectiveness of a particular method for displaying an object shall be balanced against the cost, availability, and level of difficulty to replace it. For example, some objects may be designated as sacrificial because of the high interpretive value derived from being touchable.

Section 19. AUDIOVISUAL AND COMPUTER ELEMENTS – SOFTWARE

19.1 Introduction

Traditional audiovisual presentations include linear programs with fixed running times. Through the use and/or integration of numerous elements such as sound effects, music, voice-overs, interviews, moving and historic images, AV programs can be innately dynamic. They are especially effective in eliciting emotional responses, telling stories, and conveying concepts where motion and/or sound are important or particularly effective. Computer interactive (or multimedia) programs are often non-linear. They encourage users to become engaged through interaction, exploration, and learning at their own pace and may include multiple layers of information. In an exhibit setting, AV and computer interactive elements may also interact with other exhibit elements, such as programmed lighting and electromechanical devices.

Each exhibition, its content, and presentation is custom designed. The extent to which audiovisual programs, from audio stations and exhibit videos to computer interactives, are proposed and utilized will determine when and what kind of deliverables are required. In an exhibition where AV elements are a driving force in the presentation, it is important for AV and computer specialists to be involved early in the planning and design process and for early planning documents to describe AV elements in greater detail. Where AV plays a relatively minor supporting role in an exhibition and does not involve complex strategy for production, it may be more appropriate to prepare detailed descriptions of the programs at a later stage of planning and design.

The terms “software” and “programs” are used interchangeably in this contract to describe the media content, format, and control code used in AV and computer interactive elements, including audio and video programs and computer software. “Equipment” refers to the electronic equipment used to play a program.

Equipment and software components need to be carefully coordinated to insure an effective presentation. Specifications for audiovisual and computer interactive equipment are detailed in Section 20. Software specifications are stated below.

19.2 General Requirements for Initiating Planning and Design of Software

No later than the Design Development I phase of work, the Contractor shall develop and present an overall AV strategy for the exhibition. This strategy shall be based on the Contractor’s planning and research for the proposed AV elements and shall include:

A. Description of how AV content will be integrated with the rest of the exhibition to reinforce the interpretive message, including an explanation of the interpretive purpose of the AV elements and any advantages or disadvantages of using AV instead of other media for this purpose.

B. The target audience and proposed style of presentation for the AV elements.

C. An overview of existing resources and new material believed to be necessary to create the programs including, but not limited to, historic images, archival film footage, oral history interviews, quotations, new film footage, reenactments, custom photography, animation, graphics, illustrations, music, and sound effects. The Contractor shall include a detailed listing of resource information in the Resource Package. (see Section 10 Resource Packages)

D. Proposed playback formats in order to evaluate potential production paths, and for coordination with equipment specifications.

E. Description of the physical integration of AV elements with the rest of the exhibition, including strategy for limiting sound spill, requirements for light control, and maintaining a comfortable flow of visitors through the exhibition space.

F. Description of the accessible components of all AV elements, such as captioning, audio description, assistive listening, and navigation of interactive programs by people with visual impairments. (see Section 8 Accessibility)

G. Cost estimate for the proposed AV software elements, to be included within the Class B Production Cost Estimate for the exhibition. (see Section 6 Production Cost Estimates).

19.3 Specific Requirements for Exhibit Video and Audio Programs

A. Unless otherwise specified in individual Task Orders, the Contractor shall describe each audio and video program in the exhibition no later than the Design Development I phase of work, and prepare and submit a Treatment for each audio and video program in the exhibition no later than the Design Development II phase of work. The Treatment, in both general terms, and by specific example, shall provide sufficient detail to provide a sense of the proposed production, and shall be suitable for use as a working model from which a production plan and script can be written. Each Treatment shall include:

(1) A complete overview of the proposed production's creative approach and storyline. In narrative form, the Treatment shall include a description of the actors and/or participants, their roles and general dialogue or narration, and a general description of the scenes, locations, graphics, artwork, animation, and audio elements to be used in the production. Sketches or storyboards shall be included if necessary to communicate the creative approach and storyline.

(2) The total running time for the program, based on the following guidelines:

(a) Programs located within an exhibit area without visitor seating shall be limited to 3 minutes or less unless otherwise approved by the COR.

(b) Programs located within an exhibit area with visitor seating shall be limited to 8 minutes or less unless otherwise approved by the COR.

(c) Programs located in dedicated mini-theater areas within the exhibition shall be limited to 15 minutes or less unless otherwise approved by the COR.

(d) Audio soundscapes, video imagery without a storyline, and similar continuously running, mood setting AV elements shall be of sufficient length to avoid appearing repetitious or annoying.

(3) Description of how the program content will be made accessible to visitors with visual or hearing impairments.

(4) Description of the proposed playback system, including screen size and type, audio system details (i.e., mono, stereo, surround-sound, handsets).

(5) Description of the proposed control system (i.e., continuously running, staff activated, visitor activated, automatic sensor).

B. Source information for critical video, graphic, and audio elements that are essential to the successful production of the program shall be attached to the Treatment.

C. A cost estimate for the program shall be included within the current Class B Production Cost Estimate for the exhibition. (see Section 6 Production Cost Estimates)

19.4 Specific Requirements for Computer Interactive Elements.

A. Unless otherwise specified in individual Task Orders, the Contractor shall describe each computer interactive program in the exhibition no later than the Design Development I phase of work, and prepare and submit a design for each computer interactive program no later than the Design Development II phase of work. Each program design shall include:

(1) A graphic representation (flow chart) outlining the structure and content of the program.

(2) A general narrative of the program describing the creative approach to be used in developing the content and overall graphic approach. Sketches or storyboards shall be included if necessary to communicate the creative approach. The creative approach shall include descriptions of:

(a) Graphic elements, titles, text, 2D or 3D animation.

(b) User interface, navigational devices and behavior.

(c) Attract screens, closing sequences, help screens, and credits.

(d) The use of music, sound effects, video, and/or narration.

(3) Description of how the program content will be made accessible to visitors with visual or hearing impairments.

(4) The proposed computer equipment and operating system platform for the program.

B. Source information for critical video, graphic, and audio elements that are essential to the successful production of the program shall be included with the design.

C. The Contractor shall inform the COR of all proposed programs requiring network or Internet connectivity. Plans for such programs will require additional review and approval by the National Park Service to insure compliance with all network security requirements and Information Technology policies in effect at the time of submittal.

D. A cost estimate for the program shall be included within the current Class B Production Cost Estimate for the exhibition. (see Section 6 Production Cost Estimates)

19.5 Additional Tasks

If specified in individual Task Orders, the Contractor shall perform one or more of the following additional tasks:

A. Prepare and submit scripts for AV elements. This task will typically be accomplished during the Pre-Production phase of work. Detailed requirements will be specified in individual Task Orders.

B. Prepare comprehensive screen-by-screen descriptions of the content, hierarchy, and navigation paths for computer interactive programs. This task will typically be accomplished during the Pre-Production phase of work. Detailed requirements will be specified in individual Task Orders.

C. Provide guidance, creative direction, or review and comment to the Government and its production contractors during production of audiovisual or computer interactive programs. This task will typically be accomplished during the Pre-Production or Planning and Design Follow-on phases of work. Detailed requirements will be specified in individual Task Orders.

Section 20. AUDIOVISUAL AND COMPUTER ELEMENTS – EQUIPMENT

20.1 Introduction

"Equipment" refers to the electronic devices used to play video, audio, or computer programs within an exhibit. It also includes devices and systems that control multiple programs, or that interface with other exhibit elements such as programmed lighting and electromechanical devices.

AV and computer elements present an important part of the interpretive message in exhibits where they are installed; inoperative equipment severely impacts an exhibition's effectiveness. Therefore, equipment selections should be based on the long-term requirements for the exhibit. It should be easy to operate with minimal training, and designed for long life and minimal maintenance.

Equipment and software components need to be carefully coordinated to insure that all design goals are met. Specifications for audiovisual and computer interactive software are detailed in Section 19. Equipment specifications are stated below.

20.2 General Requirements

A. Equipment and systems shall be designed with ease of use in mind, and require minimal maintenance.

B. The Contractor shall work with the appropriate project team members to insure that the exhibit space electrical system will accommodate all specified AV and computer equipment. This coordination shall begin at the earliest possible opportunity and continue through the duration of the project.

C. The Contractor shall inform the COR of all proposed systems that will require network or Internet connectivity. Plans for such programs will require additional review and approval by the National Park Service to insure compliance with all network security requirements and Information Technology policies in effect at the time of submittal.

D. The Contractor shall adhere to the Audiovisual and Computer Interactive specifications in Attachment B, National Park Service Standard Exhibit Fabrication Specifications, November 2006, Division 5, Electrical, and Division 8, Setup and Installation.

20.3 Specific Requirements for Design Development Phase

A. Design Development I

(1) In coordination with the overall AV strategy specified in Section 19, Audiovisual and Computer Elements – Software, the Contractor shall identify the types of equipment that are proposed for use with each AV

and computer interactive element as follows. Sizes and other broad characteristics shall be identified, but specific brands and models are not required at this phase of development.

(2) The Contractor shall specify locations for all equipment, for signal and control wiring or conduit runs, for exhibit power circuits/outlets to be used by each piece of equipment, and for switch locations.

(3) The Contractor shall develop start-up and shut-down procedures for the exhibition. This shall be conducted from a single control panel or bank of wall switches, or by use of a preprogrammed timer with a manual override function and battery backup. Start-up and shut-down shall be designed for convenient operation. Controls shall have limited staff access and, preferably, grouped together in one location.

B. Design Development II

The Contractor shall provide detailed specifications for all audiovisual and computer interactive equipment in the exhibition as follows:

(1) Specify brand name equipment that is appropriate for the application, as well as for the environmental conditions in which it will be installed. Use industrial or commercial grade equipment. Simplify systems design by using a single brand and model for each type of equipment throughout the exhibit whenever possible. When possible, computer equipment shall be the same brand available to the NPS via the DOI-approved equipment list.

(2) Specify all ancillary equipment required for a fully operational system, such as surge protectors, uninterruptible power supplies, push buttons, and motion sensors.

(3) All equipment shall be identified by brand name and model number.

(4) For each product specified, provide the manufacturer's technical information sheets, the manufacturer and/or supplier's address, telephone number, and information regarding accessories and additional equipment.

(5) Special order items and items that are not normally available from a manufacturer's stock shall be clearly identified as such.

(6) The Contractor shall provide architectural specifications including, but not limited to, the number and placement of circuits, load requirements for each circuit, and the number, type, and placement for high and low voltage conduit.

(7) Prices for all equipment shall be included within the Contractor's Design Development II Class B Production Cost Estimate. In addition, the cost of one spare unit for each type of equipment shall be included in the estimate unless otherwise specified by the COR. The Contractor shall also provide a life-cycle cost estimate for all equipment specified in the exhibition. (see Section 6 Production Cost Estimates)

20.4 Specific Requirements for Production Documents Phase

A. The Contractor shall update the AV and computer equipment specifications to reflect all changes in the project and submit the updated equipment specifications as part of the Document Preparation submittals.

The Contractor shall review the availability of the approved equipment during the Production Documents phase. When previously specified equipment has been discontinued, the Contractor shall specify replacement equipment by brand name and model number, and provide cut sheets that show all product specifications.

B. Prices for all equipment shall be included within the Contractor's Class A Production Cost Estimate. In addition, the cost of one spare unit for each type of equipment shall be included in the estimate unless otherwise specified by the COR. The Contractor shall also provide an updated life-cycle cost estimate for all equipment specified in the exhibition. (see Section 6 Production Cost Estimates)

C. If specified in individual Task Orders, the Contractor shall provide detailed wiring diagrams for the equipment in each audiovisual and computer interactive system. Wiring diagrams shall show the precise points of connection on each piece of equipment; wiring between systems and controllers, and the interface between AV systems and lighting or other electromechanical device. Clearly identify the circuit/outlet to be used by each piece of equipment; specify the load rating for each piece of equipment, and the total load on each circuit/outlet to be used for powering the equipment.

Section 21. TACTILE EXHIBIT ELEMENTS AND MECHANICAL INTERACTIVES

21.1 Introduction

The use of tactile exhibit elements and mechanical interactive exhibits are important to the effectiveness of interpretive exhibits. They enhance the aesthetic appeal of an exhibit by providing dimensionality, and invite visitors to physically interact with the exhibit, which increases visitor interest. Mechanical interactive exhibits in particular add another level of learning through "doing" in addition to looking and reading.

Some mechanical interactive elements supplement the interpretive message by discovery through activity; others are used as a tool to reveal information. Examples of mechanical interactive exhibit elements that have been used successfully in National Park Service exhibits include lift and drop exhibits, hinged or sliding doors, discovery drawers, and a roulette-style wheel.

21.2 General Requirements

When tactile exhibits and mechanical interactive exhibits are incorporated into exhibits, safety, accessibility, and durability must be primary considerations in the design of these elements. The exhibit element must be relevant to the interpretive theme and enhance visitor understanding. Instructions for use of mechanical interactive exhibits must be obvious and easily understood. Tactile and mechanical interactive exhibit must be low maintenance except when the nature of the tactile or interactive exhibit is such that routine maintenance will be required and the requirement for such maintenance is included as part of the design proposal.

21.3 Specific Requirements

A. Safety.

Safety must be the highest consideration in the design of tactile and mechanical interactive exhibits. The design shall include details that prevent injury during use or misuse. Particular care shall be taken to prevent fingers from being pinched between closing doors or between rotating and fixed parts. Electrical components, such as light fixtures, shall be inaccessible to visitors. Cables, pulleys, and other mechanical features shall also be inaccessible, except where these are an interpretive component of the interactive design, in which case such features shall be designed so that they pose no risk of injury.

B. Accessibility.

All tactile and mechanical interactive exhibit elements shall meet accessibility requirements specified in Section 8, Accessibility.

C. Durability.

Tactile and mechanical interactive exhibits will endure more wear than typical graphic panels and other static exhibit structures. When designing tactile and mechanical interactive exhibits, specify materials that are appropriate for the physical environment and for the particular use intended. Specify durable, heavy-duty materials that can withstand hundreds of thousands of uses a year for years on end; always anticipate aggressive use of the exhibit. For mechanical interactive exhibits, simplicity of design with as few moving parts as possible is important.

D. Interpretive Purpose.

In many instances, the interactive element supplements the interpretive message. The purpose of the interactive exercise shall be linked to the interpretive theme.

E. Visitor Instructions.

The Contractor shall provide instructions for use of the mechanical interactive exhibit, either as a stand-alone text or graphic element or as part of the broader interpretive text. Where safety instructions are warranted or required, the safety instructions shall be separate and distinct from any other instructions or interpretive messages.

F. Maintenance.

Tactile and mechanical interactive exhibit elements shall be designed to require minimal maintenance other than cleaning. Exhibits that require frequent lubrication, alignment, tightening of parts, or replacement of parts are generally inappropriate for most National Park Service sites.

The Contractor shall design an “Out of Service” sign, or similar, for each mechanical interactive element in the exhibit, taking care that each sign can be secured and removed repeatedly to the specific interactive element for which it is intended. Wherever possible, the sign shall convey the notice as an interpretive message that follows the thematic intent of the exhibit.

G. Life-cycle Cost.

The Contractor shall estimate the useful life span of each tactile and mechanical interactive exhibit element, considering the estimated visitation, the type of use, and other considerations, and provide repair or replacement costs.

Where an interactive exhibit element requires routine maintenance, including cleaning, the Contractor shall identify the types of maintenance and estimate the annual cost of maintenance, both in terms of labor as well as materials costs. (see Section 6, Production Cost Estimate)

Section 22. EXHIBIT STRUCTURES

22.1 Introduction

Exhibit structures work as a platform to support the content elements of the exhibit, and enhance the aesthetic quality of the exhibit by adding dimensionality, functionality, and presence, with characteristics that are appropriate for the themes of the exhibit, the exhibit space, and in some instances with the region of the country in which the exhibits are to be installed.

22.2 General Requirements

When designing exhibit structures the Contractor shall incorporate materials and fabrication techniques that are specified in Attachment B, National Park Service Standard Exhibit Fabrication Specifications, 2006 and its references. Exhibit structures shall also be designed to meet the requirements specified elsewhere in this Section. Deviations from these specifications shall only be by written approval of the COR for the individual Task Order.

22.3 Specific Requirements

A. The Contractor shall become familiar with the general and specific requirements of the project before proposing design elements. Examples of such requirements include:

(1) Current and anticipated visitation.

(2) Spatial requirements, such as the size and shape of the exhibit area, exposed and hidden dimensional characteristics such as columns and support beams.

(3) Other pertinent spatial characteristics such as outlets, heating and cooling vents, wall mounted heating devices, security equipment, and plumbing.

(4) Access considerations, such as the size of doors, stairs, elevators, and other limiting features leading to the exhibit area.

(5) Environmental conditions, such as the availability of heating, cooling, and humidity control, exposure to outdoor elements and the nature of such elements, historic characteristics of the exhibit area.

B. Exhibit structures shall provide dimensionality, especially when three-dimensional objects are not available for display.

C. Structural design shall accommodate the available space, ensuring that the exhibits do not overwhelm the space available, nor are overwhelmed by the space. Structural elements shall be designed to provide for the comfortable flow

of visitors, taking into account existing and anticipated visitor use patterns as well as anticipated "stay" times within the museum area.

D. Exhibit structures shall be designed for the specific environment in which the exhibit will be installed, and to accommodate unique requirements. For most projects, exhibits will be housed in heated and air-conditioned rooms. However, some exhibit environments are more extreme and will require alternative design approaches and materials. Other examples of unique requirements include installation into historic structures in which the original historic fabric cannot be altered or disturbed; exhibits installed in flood plains that require easy and quick disassembly for removal on short notice; in facilities where the exhibit area is used as a multipurpose room, the exhibit design requirement may include easy mobility or portability of some or all of the structures, and the design of support equipment and supplies to aid in mobility, such as tow bars or rolling cases.

E. The Contractor shall ensure that structures are designed to accommodate all media elements that are part of the exhibit, such as Discovery Drawers, audio speakers, video monitors, and supplemental AV equipment, so that the design creates no obstacles to the installation of such elements. The design shall provide for easy access to all electronic equipment and lighting for routine servicing with a minimum of climbing, bending, and reaching.

F. The design shall be easily maintainable by the individual park area. The design shall reflect the availability and type of staff to perform routine maintenance tasks. The number of different types of materials in an exhibit shall be kept to a minimum. For example, whenever possible, use glass or acrylic in an exhibit, but not both, in order to reduce the risk that inappropriate cleaning agents will be used.

Section 23. EXHIBIT LIGHTING

23.1 Introduction

The quality of lighting in NPS visitor centers, historic structures, and exhibitions has a significant impact on the quality of the visitor experience and the preservation of historic objects. Successful exhibit lighting should be aesthetically pleasing, should enrich the visitor experience, and should balance the often-competing needs of interpretation, presentation, object conservation, energy efficiency, and maintenance.

The goal is to have a complete visual presentation of the visitor center, historic structure, or exhibition area, while limiting theatrical and dramatic lighting practices. The lighting designer should consider the requirements of all parties invested in the exhibit process – the visitor, designer, fabricator, curator, conservator, interpretive staff, and maintenance. The lighting should be sustainable for the life of the exhibit and, with the exception of lamp replacement, be relatively maintenance free.

23.2 General Requirements

The Contractor shall specify a lighting system that is appropriate to the exhibition space using the following guidelines:

A. Halogen track lighting shall be considered the default standard for exhibition gallery areas. Other lighting systems may be used where indicated by design or functional requirements and approved by the COR.

B. Use of metal halide lamps shall be kept to a minimum.

C. Standard and compact fluorescent lighting (CFL) shall be limited to use primarily for ambient room illumination, signage, and back-lit interpretive panels. In exhibits, fluorescent lighting may be used only where color temperature and color rendering index are not a consideration, where no directional lighting is needed and, in the case of CFLs, where no dimming is required.

D. Use the minimum number of fixtures to accomplish the task.

E. Limit the types of fixtures.

F. Limit the types of lamps. Different wattages and beam spreads should be kept to a minimum within the same family of lamps since, during maintenance, lamp types are often incorrectly substituted.

G. Whenever possible, specify energy efficient lamps such as Halogen IR PAR lamps and long life MR-16 lamps.

H. Limit the use of theatrical and ellipsoidal lighting projectors; use only where absolutely necessary to accomplish the task. When image projection is required, MR-16 type projectors are preferred.

I. To insure continued viability and product support, the Contractor shall specify commonly available lighting products that are recognized and proven successful in similar exhibit or commercial display applications. Limit the use of alternative technologies (fiber optics, LEDs, etc.) to established manufacturers and systems that can be maintained for the life of the exhibit. Fiber optic and LED systems must be approved by the COR.

J. To minimize visual pollution, lighting should be designed to integrate with the architectural space, especially in exhibition areas.

K. Integrate natural light where possible and where artifacts will not be impacted. Use daylight harvesting technology where possible and where artifacts or visitor services will not be impacted.

L. The Contractor shall coordinate with the appropriate project team members to insure that heat generation from exhibit lighting does not exceed the allotted cooling capacity of the proposed or existing HVAC system.

M. Lighting shall be designed for ease of maintenance using the following guidelines:

(1) Fixtures shall be accessible for routine maintenance.

(2) Lamps shall be standardized, widely available, and easily replaceable.

(3) Wherever possible, choice of fixtures shall be such that lamp replacement can be accomplished without disturbing fixture accessories (filters, screens, etc.)

(4) Fiber optic illuminators shall be located in a manner that allows proper ventilation and easy access for maintenance.

N. Lighting controls shall be designed using the following guidelines:

(1) The Contractor shall provide lighting control specifications, including any requirements for automated control systems linking lighting to AV or other exhibit elements, requirements for dimmers, and start-up, operating, and shut-down procedures.

(2) Locations of all lighting controls shall be indicated on the lighting plan. Controls shall have limited staff access.

(3) Use of a circuit breaker panel for daily switching of exhibit lighting is discouraged.

(4) Dimmers shall be provided on lighting circuits to the extent required for effective lighting control within the exhibit. Dimming control systems programmable with preset scenes shall be preferred.

(5) The primary method of controlling default light levels shall be by lamp specification or through use of accessory screens. Dimming of lamps shall be kept to a minimum for this purpose.

(6) Occupancy sensors shall be used where possible to conserve energy and to limit light exposure in exhibits containing light sensitive artifacts.

O. The Contractor shall provide a preliminary lighting plan at the Design Development I phase of work, showing proposed fixture locations and types. In the Production Documents phase of work, the Contractor shall provide a reflected ceiling plan of the exhibit area(s) identifying existing and new lighting fixtures, hardware, and controls. The plan shall include a lighting schedule for all new lighting indicating type of track, track accessories, fixture, fixture accessories, lamp type, wattage, and beam spread.

23.3 Specific Requirements for Light Levels in Exhibition Spaces

A. Light levels shall meet the minimum requirements stated in the Accessibility specifications of this contract. (see Section 8)

B. Light levels in exhibit areas shall be defined by the nature of the exhibits and limited by artifact conservation requirements.

C. Where necessary and where possible, the design shall incorporate adaptive lighting techniques, allowing visitors' eyes to adjust to the lower levels required for light sensitive artifacts or audiovisual spaces.

D. The Contractor shall coordinate with the project conservator when designing lighting plans for exhibit areas where artifacts are displayed. The following guidelines for lighting of artifacts shall be followed:

(1) Attachment F, NPS Exhibit Conservation Guidelines, will provide general guidance for the lighting of artifacts in exhibition spaces.

(2) The project conservator will be responsible for specifying artifact lighting limits.

(3) All fixtures illuminating sensitive artifacts shall be equipped with Optivex UV filters.

(4) Infrared radiation shall be eliminated from the object environment.

23.4 Specific Requirements for Artifact Case Lighting

A. Attachment F, NPS Exhibit Conservation Guidelines will provide general guidance for artifacts case lighting.

B. Conventional exhibit case lighting shall be located in a light attic, separated from and insulated against heat spill into the artifact environment. Adequate ventilation shall be provided to remove heat from the light attic, preferably passively with exit holes or, if necessary, with the use of exhaust fans. Heat gain from lighting shall be no more than 3 to 4 º F in the course of an exhibit day.

C. Where different light levels are required within a case (for example, where labels require higher lighting levels than adjacent artifacts) the lighting system shall be designed to selectively illuminate individual items within the case.

D. Directional lighting (MR-16, PAR, fiber optics, LEDs) is preferred for exhibit cases. Fluorescent lighting, although less preferable, may in some instances be used to provide a wash of general illumination. However, care must be taken to account for the color temperature and the poorer color rendering index of fluorescent lighting. Care should also be taken to avoid the appearance common to cases lit with fluorescents, having too much light at the top of the case and not enough at the bottom.

E. Fiber optic luminaires and light bars may be located inside the artifact chamber provided the entry holes are sufficiently gasketed so that there is no additional air exchange and the exhibit environment is not affected. Fiber optic illuminators may be located either outside or inside the exhibit case. If inside, the preferred location is in the top of the case. Adequate insulation between the artifact chamber and the illuminator must be provided if the illuminator is located in the base of the exhibit case. Manufacturer's recommendations for air exchange and illuminator mounting/position must be followed.

F. LED lighting may be located in the artifact chamber provided they give off no heat. LED ballasts must be remotely located outside the artifact chamber.

G. All ultraviolet radiation should be eliminated through use of a UV blocking acrylic or glass separator between the artifact chamber and the light attic.

Section 24. MOCK-UPS AND PROTOTYPES

24.1 Introduction

Mock-ups or prototypes may be required for unusual or innovative approaches to presentation and interpretation. Examples include exhibits that incorporate new technology, mechanical devices, lighting effects, or other special effects or concepts that are unfamiliar to the project team. In these cases, mock-ups or prototypes may be required to test the idea and work out problems before making a final decision about their use in the exhibit. Mock-ups may also be used for testing the interpretive effectiveness of an idea during Formative Evaluation of the exhibition.

Mock-ups typically refer to working models that are constructed simply, quickly, and at minimal cost in order to test a concept. Prototypes are more refined than mock-ups, and closer to the final product in material, construction, and operation.

24.2 General Requirements

A. Requirements for the purpose, number, and type of mock-ups and prototypes will be specified in individual Task Orders.

B. In each case, the mock-up or prototype shall be constructed to demonstrate and test the functional characteristics required in the final production version.

C. If necessary the Contractor shall revise the design based upon review comments provided by the COR and information gained from construction and testing of the mock-up or prototype.

Section 25. PRODUCTION SUPPORT

25.1 Production Support Introduction

The National Park Service may choose to involve the Contractor in the production process to maintain the design intent, provide continuity throughout the project and resolve production issues. Production Support includes Planning and Design Follow-ons, to update existing or create additional content and/or exhibit elements; and Fabrication / Installation support to review the Exhibit Fabricator's work and assist in installation, document as-built content, and evaluate the completed project. Details for all Production Support work will be specified in individual task orders.

25.2 General Requirements

A. Coordinate with Project Team.

The Contractor's design team shall communicate with the other project team members to insure that the completed project fulfills the conceptual and technical requirements as specified in the Production Documents.

B Production Meetings.

Attend meetings where advice and information from the planning and design team is required. Such meetings may include postaward conferences with fabrication contractors, meetings or conference calls to discuss production submittals from the Exhibit Fabricator and other contractors, and meetings or conference calls to discuss other fabrication issues related to the Production Documents.

25.3 Specific Requirements for Planning and Design Follow-ons

A. Revise Exhibit Design Drawings.

Revise drawings when portions of the approved design or content are found to be unusable for any reason. The Contractor shall redesign exhibit areas, exhibits, and or exhibit elements where necessary to accommodate changes to the project during production.

B. Revise Graphic Layouts

Revise graphic layouts when the approved design or content is found to be unusable for any reason. At a minimum, the Contractor shall:

(1) Select substitutions for graphics and artwork that are found to be unacceptable, or when the original source material cannot be located or obtained, or when use rights cannot be obtained.

(2) Revise layouts to incorporate substitution of graphics and artwork or minor corrections to text.

(3) Revise layouts or positioning of graphics or artifacts when graphics, artifacts, or objects cannot be obtained, are the incorrect size on the original drawings, or are otherwise unusable.

C. Revise Production-Ready Graphic Files.

Revise files following the specifications in Graphic Layouts and Digital Graphic Files (see Section 15). In addition the Contractor shall perform the following work:

(1) Using a color chart from the photo lab, the Contractor shall adjust all colors for the final output process to be used, to insure that they match those specified in the Approved Final Package.

(2) The Contractor's shall respond to inquiries from the COR, photo lab, and production team concerning layout file design, high-resolution scans, specifications and intentions.

D. Create Original Graphic Content

Where advantageous to the Government and specified in individual Task Orders, the Planning and Design Contractor shall fully develop graphic content for production. Examples of graphic content that may be specified under this contract as part of Production Support include the development of original illustrations, the development of original and adapted maps, and new photography for use in the exhibit.

E. Provide Creative Direction

Provide creative direction to the Exhibit Fabrication Contractor and to other NPS Contractors that are involved in the Exhibit Fabrication process, including illustrators, photographers, model makers, audiovisual and multimedia producers, audiovisual equipment technicians and systems engineers, curators, and lighting designers.

25.4 Specific Requirements for Fabrication / Installation Support

B. Review Shop Drawings or Fabrication Drawings.

Review and comment on shop drawings that are submitted by the Exhibit Fabrication contractor. Ensure that the design intent is maintained, that measurements, materials, and finishes are correct, and that the details are reasonable.

C. Review Production Documents/Samples.

Review and comment on samples, mockups, and prototypes submitted by the Exhibit Fabrication Contractor, as specified in the Individual Task Order, to insure they fulfill the conceptual and technical requirements of the project. These typically include, but are not limited to, catalog cuts for materials and equipment, color and material samples, production proofs of graphic layouts, prototypes of interactive elements, and specialty treatments that are specified in the design package or that are proposed by the Fabricator.

D. Inspect Fabrication Work

Inspect work-in-progress and completed exhibit elements at the Fabricator's shop, photo labs, subcontractor's shops, as specified in Individual Task Orders.

E. Support Exhibit Installation

Attend the installation of the exhibits in part to inspect pre-installation site conditions, to provide technical guidance during installation of the exhibits, to provide art and set direction, and to light or to direct the lighting of the installed exhibits. Work may include a final walkthrough of the installed exhibits with the Exhibit Fabricator and HFC and park staff to identify obvious design flaws, to identify undesirable content and design features, and to propose alternative design solutions.

F. Update Content Management Data

Revise all information to reflect the final, "as-built" content of the exhibit. Work includes incorporating revised or corrected text and text specifications, replaced images or revised image specifications, incorporating content elements that are added during the fabrication process and deleting content elements that are not used, and updating all other Content Management Database schedules.

G. Support Summative / Remedial Media Evaluation

Work will be specified in Individual Task Orders and may include:

(1) Participation in the evaluation process, such as attending evaluations and reviewing the final evaluation report.

(2) Preparing and submitting alternative design solutions to remediate design weaknesses identified in the final evaluation report.

(3) Revising, refining, and submitting the alternative design solutions into a single design element for each weakness, based on comments by the COR.